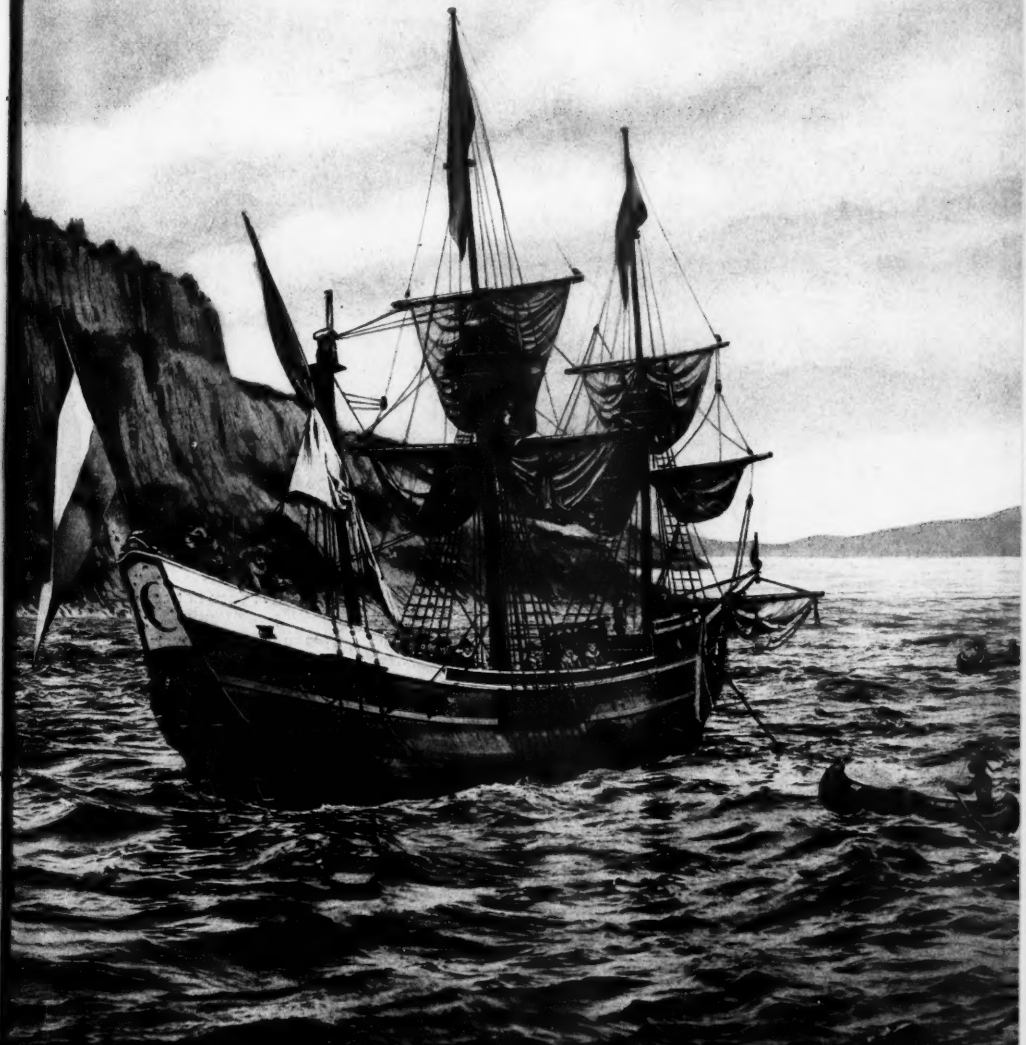
THE DENTAL DIGEST



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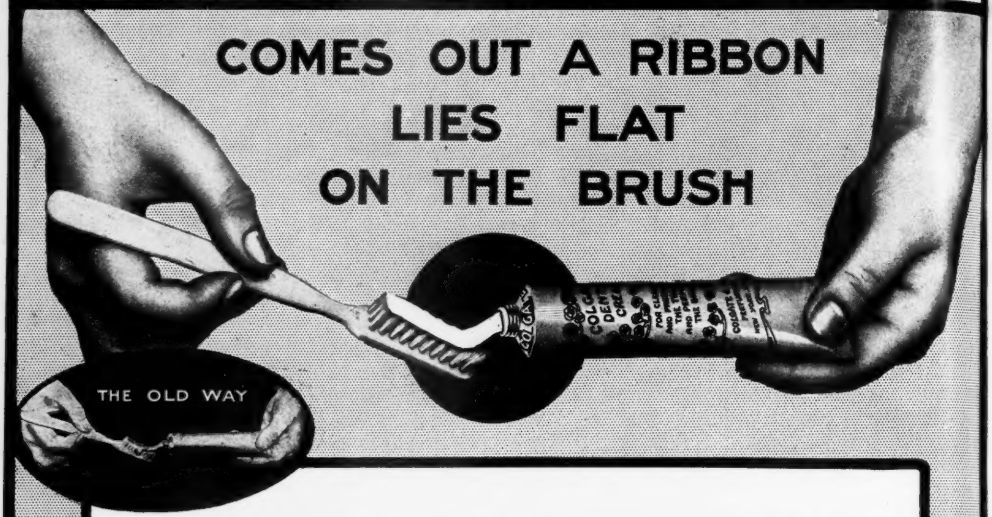

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AN EFFICIENT and HARMLESS CLEANSER

It polishes the tooth enamel without scratching or abrading it. It does not contain irritating or insoluble crystals which can inflame the gums.

Its habitual use prevents the formation of the mucous plaques under cover of which the acids of decay are generated and attack the teeth.

If your patients habitually use it, your efforts in their behalf will be materially advanced. During their absence from your office their mouths will be kept clean, the soft tissue maintained in normal tone and the teeth rendered relatively immune to carious attacks.

ECONOMY The flat ribbon of cream from the rectangular opening ▭ does not roll off the brush as from the old-style round opening ○, so there is no waste or inconvenience. There is also economy in the fact that ½ as much cream comes out of our square opening as from the old round opening.

DENTISTS ENDORSE We recently sampled all the dentists, 32 in number, in three residential towns near New York. We told them that their names would not be used for advertising, but we wanted an honest, candid opinion of the value of this Dentifrice. 23 wrote that it was "*the most satisfactory Dentifrice they had ever used*"; 7 wrote that it was "*very satisfactory*," and only two remained unheard from.

Two Other Colgate Comforts in Original Packages

We can *prove* we improved these packages by Patent Office records and by the efforts of our competitors to imitate us. Isn't it reasonable to suppose that the same care and thought have been put into the quality of the contents?

COLGATE & CO. Established 1806

Dept. 21, 55 John St., New York

The cover this month shows a photograph of the facsimile of the ship "Half Moon," in which Henry Hudson sailed up the river now named for him. See page 622.

THE DENTAL DIGEST

GEORGE WOOD CLAPP, D.D.S., Editor

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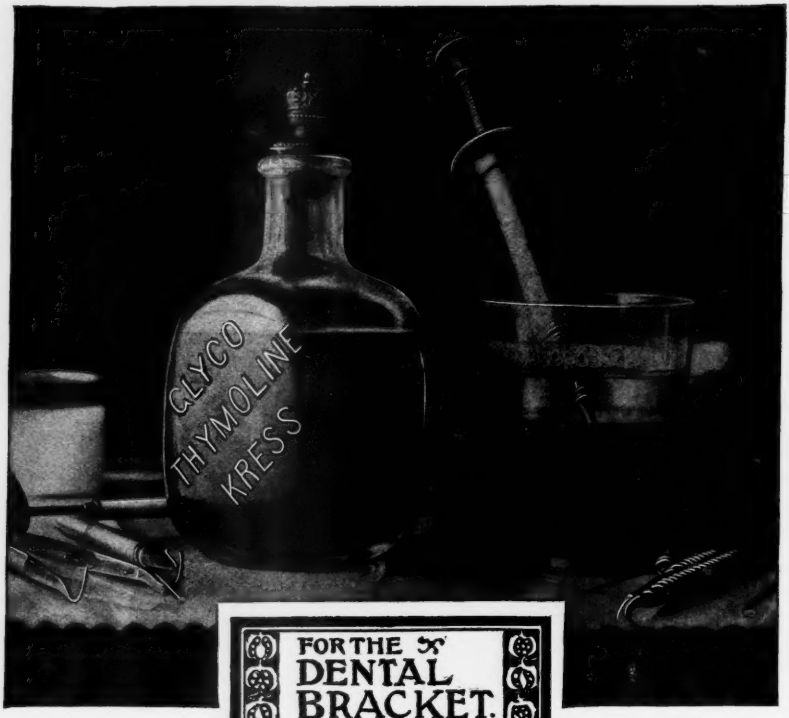

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DENTAL
BRACKET.

QUOTATIONS.

"Proper instrumentation and Glyco-Thymoline Cure Pyorrhoea."

"It is soothing, very healing, and a powerful deodorant."

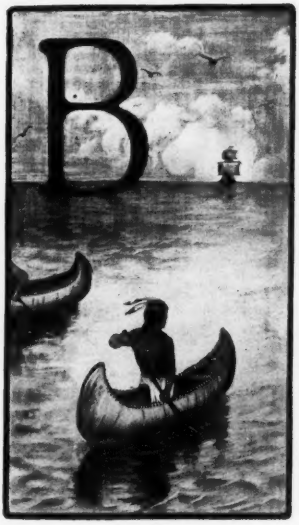
"We prescribe it exclusively, after extractions, and sore mouths are a thing of the past."

"I prescribe Glyco-Thymoline for all diseases of the oral cavity, offensive breath, ill-fitting plates, etc., and find my patients in their appreciation of its merits, give new assurance of its worth, and their continued use."

"A most inviting solution."

"If I can get as good a compound as Glyco-Thymoline by just writing to Kress & Owen Co., 210 Fulton St., N. Y., for it—here goes."

WHEN HUDSON CAME!



EHOLD, MANITOU COMETH!

So reported some Jersey Indians who, one bright June morning in 1609, were fishing near Sandy Hook in what is now New York Bay. The tiny bark canoes danced on the dimpling water, when far off to the south, and dimly seen at first against the faint blue of the sky, they spied something big and white, taking ever more definite form and growing ever larger.

Forgotten were the lines and bone hooks. Unnoticed swam the fish they had before been so eager to catch.

Surely this great sky monster was coming to them! Out of the very heavens he was taking more and more definite form, coming steadily nearer. Deep in the rolling water they dug their paddles, and their dancing canoes carried the tale to their comrades on shore. Immediately assembled the chiefs and medicine men and council was held. Surely it could be no other than Manitou!

For in that direction was only water. Farther out than their canoes had ever been the waters rolled and tossed, sometimes in play, sometimes in wrath. And when Manitou was angry there came from that direction the fierce lightning of his rage and the rolling thunders of his voice. From that direction no human being had ever come.

What other direction so fitting as that for the coming of Manitou!

So welcome was prepared in food, presents, in sacrifices and dances; and they awaited the event with the prayer that he came in peace.

The House of Manitou which thus came from the sea and heavens was the little ship "Half Moon," commanded by an Englishman, Henry Hudson, and manned by a mixed crew of English and Dutch. For many months they had sought a direct passage between the Europe they served and the East whose jewels and spices they desired. Along the frozen north they had made repeated trial. Led by the tales of

his friend, Captain John Smith, Hudson had sailed far south, seeking a river that opened into the sea near Japan. Now they were returning north, disappointed indeed.

As they skirted the coast of New Jersey, they saw a great opening into the land, and it was while making toward it that they were seen by the Indians. They cast anchor near Sandy Hook, and on the next day anchored inside the Hook, in what is now New York Harbor.

Here the Indians came off to them. They showed their pleasure in being thus honored by a visit of superior beings. They brought presents of food and skins. And they conducted their white visitors in several excursions ashore.

It is often but a short step from the sublime to the ridiculous. Tradition has it that the first place where Henry Hudson set foot on shore in this part of the New World was Coney Island. A curious parallel with more recent days is the report that when Hudson's men came first to what is now New York City they brought liquor which intoxicated the Indians; and the name Manhattan is said to mean in Indian, " the place of the general intoxication."

After a few days in what is now properly called New York Harbor, Hudson began the sail up the river now named for him, but because of adverse winds got only as far as Yonkers when two days had passed.

Here, as frequently before, he was visited by Indians, but his crew were suspicious of them, and none were allowed on board. Journeying and fishing, and occasionally trading with the Indians, Hudson's little ship gradually advanced nearly to where Albany now stands.

The narrowing of the river and the shoaling of the water convinced him that this was not that passage to the East which he sought, and in disappointment he put about and sailed down the river.

He reached Manhattan Island October 3d, and here had a real battle with the Indians. Following this, he sailed away, shaping his course for Europe, and on November 7th reached England.

His reports were at once forwarded to his employers in Holland, and although they were disappointed in not finding the Eastward Passage, they at once began the occupation of the land which Hudson had reported as so fair and fertile. Thus began the settlement of New York.

To eyes accustomed to the huge dimensions of the monsters of the sea that now cross it so quickly and regularly, the dimensions of Hudson's ship are of interest. They arouse also warm admiration for the hardy navigators who faced such perils in so small a craft.

Dimensions of " The Half Moon " in feet: Length over all, 74.54; on water line, 58.70; breadth, 16.94; depth, 10.08.

THE HUDSON-FULTON CELEBRATION

September 25 to October 9, 1909

New York will largely give itself over, during this period, to celebrating the three hundredth anniversary of the discovery of the Hudson River by Henry Hudson and the hundredth anniversary of the trip up the Hudson of Fulton's "Clermont" (August 17, 1807).

The city of New York will be illuminated as no city in the world has ever yet been. In addition to the regular lighting, there will be used, approximately, 1,250,000 incandescents, 7,000 arc lights, 3,000 flare arcs, and searchlights aggregating 1,800,000 candle-power, making in all nearly 26,260,000 candle-power, from 6.30 P.M. to 12.30 A.M. each day.

At sixteen places along the Hudson from New York to Newburgh, huge signal lights, each thirty feet in circumference by thirty feet high, will be lighted simultaneously by President Taft on October 9th, the last day of the celebration. They will burn with a flame sixty feet high for at least four hours.

GENERAL PLAN OF CELEBRATION

Saturday, September 25th

Rendezvous of American and foreign naval vessels off Governor's Island, New York.

Facsimile of Hudson's "Half Moon" to enter the river, to be formally received and to take her place in line.

Facsimile of Fulton's "Clermont" to take position in line with appropriate honors.

Naval guests to disembark and be officially received.

On the evening of Saturday, September 25th, with thirty or forty foreign and American warships anchored off 110th Street, a grand firework display will be given on floats on the New Jersey side of the river in honor of the visiting vessels. This firework display will be entirely out of the ordinary, and startling features have been originated for the occasion which cannot fail to excite the admiration of the millions of people who will be able to view them from both sides of the river.

Sunday, September 26th

Religious observances by those who are accustomed to worship on Sunday.

Monday, September 27th

General decoration of public and private dwellings from New York to the head of the river.

Reception to official guests at the Headquarters of the Department of the East of the United States Army on Governor's Island.

Opening of exhibits of paintings, prints, books, models, relics, etc., by the Metropolitan Museum of Art, the American Museum of Natural History, the Hispanic Museum, the American Numismatic Society, the New York Public Library, the New York Historical Society, the New York Genealogical and Biographical Society, the

American Geographical Society, Webb's School for Shipbuilders, the New York Yacht Club, and *similar institutions throughout the State.* The exhibitions at the Metropolitan Museum of Art and the American Museum of Natural History promise to be the most remarkable of the kind ever held in this country, and will probably extend over a period of several months.

Music festivals in the evening in each of the five boroughs of the city.

On some day or days of this week there will be a remarkable exhibition of flying machines. The Hudson-Fulton Celebration Commission will spend $25,000 or more in promoting these aerial contests. The New York *World* has offered a prize of $10,000 for the aeronaut who, with a mechanically propelled airship, sails over the course from New York to Albany traversed by Fulton's first steamboat in 1807. This competition will be conducted by the Aero Club of America, and has been approved by the Commission as a part of the official celebration.

Tuesday, September 28th

On Tuesday, September 28th, there will be an Historical Parade in the City of New York participated in by all nationalities. The procession will be composed of floats and moving tableaux representing the principal events in the history of the Aboriginal, Dutch, English, Revolutionary and American periods, and will be very beautiful and instructive.

In the evening, the Official Literary Exercises will be held in the Metropolitan Opera House, the Great Hall of the City College, Carnegie Hall, and the Opera House of the Brooklyn Academy of Music, at which orations will be delivered by men of national reputation.

The glory and the material benefits of Hudson's and Fulton's achievements are the heritage of the people of the entire State, and the program for Wednesday affords a practical means for a general observance of the occasion from one end of the State to the other. Features of this day's observance will be as follows: Commemorative exercises in Columbia University, New York University, College of City of New York, Cooper Union, University of St. John at Fordham, Hebrew University, Brooklyn Institute of Arts and Sciences, Public Schools, Historical Societies, and all the universities, colleges and institutions of learning throughout the State of New York; with free lectures for the people in New York City under the auspices of the Board of Education.

At New York (in the vicinity of 96th Street off Riverside Drive), Motor-Boat Races in six classes, with preliminaries on September 25th, 27th and 28th; pulling races between crews from the various branches of American and foreign war and Government service represented, and canoe races.

At Yonkers.—High-Power Motor-Boat Races; Rowing Races for regular rowing organizations in about ten classes.

At Newburgh.—Sailing Races for 30-footers and under (probably including the American-Dutch challenged Sander race), and also motor-boat races in about six classes.

The finals will be held at New York on Wednesday, September 29th; at Yonkers on Wednesday, September 29th, and at Newburgh on Saturday, October 2d.

Thursday, September 30th

On Thursday will occur the military parade, participated in by the United States Army, the United States Navy and Marine Corps, the National Guard, the Naval Militia, veteran organizations, and the marines and sailors from foreign vessels.

Friday, October 1st

Friday, October 1st, is devoted to the Naval Parade and incidental ceremonies. It is planned to have as many vessels of the American and foreign navies, the merchant marine, excursion boats, and pleasure craft as possible go from New York to Newburgh, taking with them the facsimiles of the "Half Moon" and "Clermont."

Simultaneously with the advance of the South Hudson Division, it is proposed to have a counter-procession from Albany to Newburgh, the two divisions meeting and holding appropriate ceremonies at Newburgh. Here the "Half Moon" and "Clermont" will join the North Hudson Division.

It is probable that the historical parade of Tuesday will be repeated in Brooklyn on Friday.

Saturday, October 2d

Saturday, October 2d, is designed for a general carnival day in New York City.

The New York division of the Naval Parade will return to its starting point.

In Newburgh Bay there will be aquatic sports.

The Memorial Arch erected by the Daughters of the Revolution at Stony Point Battlefield will probably be dedicated on this day.

The celebration will culminate in New York City in the evening with a Carnival Parade. This feature, with its moving allegorical tableaux, participated in by the German societies of the city, will, it is believed, exceed in beauty and interest the most famous carnivals in Europe.

Brilliancy will be added to the general spectacle by the illumination of the fleet and public and private buildings and a pyrotechnic display. Displays of fireworks at various points, notably on the great bridges, as in the fêtes of the 14th of July in Paris, are in contemplation.

At 9 P.M. it is designed to have a chain of signal fires from mountain tops and other eligible points along the whole river, lighted simultaneously.

Sunday, October 3d

Beginning Sunday, October 3d, such portion of the Lower Hudson Fleet as can continue the voyage to Troy, together with the North Hudson Fleet and the "Half Moon" and "Clermont," will be subject to the arrangements of the Upper Hudson Committee of the Commission.

In New York City there will be a sacred concert in Carnegie Hall by the People's Choral Union, of which Mr. Frank Damrosch is conductor.

Monday, October 4th

Upper Hudson: On Monday the Naval Parade will be at Poughkeepsie, the county seat of Dutchess County, and remain there during the Poughkeepsie Ceremonies. The erection of a statue of Robert Fulton has been suggested as a feature of the Poughkeepsie celebration.

Lower Hudson: In Yonkers there will be a street parade with historical floats and other ceremonies, assisted by Mt. Vernon, New Rochelle, and nearby villages.

Tuesday, October 5th

Upper Hudson: On Tuesday the Naval Parade will proceed to Kingston, the county seat of Ulster County, while similar exercises take place there. A statue of Governor Clinton has been proposed as the permanent memorial here.

Lower Hudson: On this day it is proposed to take the parade of floats from Hastings through Dobbs Ferry, Irvington and Tarrytown to North Tarrytown, these villages, together with nearby communities and White Plains, joining.

Wednesday, October 6th

Upper Hudson: On Wednesday, October 6th, the Naval Parade will go to Catskill, the county seat of Greene County. It is proposed that the ceremonies here include the dedication of a statue of Rip Van Winkle.

Lower Hudson: Local celebrations centering at Nyack, joined in by Piermont, Grand View, Upper and Lower Nyack, and neighboring villages as far as Tuxedo.

Thursday, October 7th

Upper Hudson: On Thursday, October 7th, the fleet will continue on to Hudson, which is the county seat of Columbia County, and is named after the great explorer. A statue of Henry Hudson is the appropriate memorial proposed at this point.

Lower Hudson: The historical floats to be transferred to Ossining and Haverstraw, the parade to be participated in by Croton, Scarborough, West Haverstraw, Stony Point, and neighboring villages.

Friday, October 8th

Upper Hudson: On Friday, the 8th, the flotilla will advance to the Capital of the commonwealth, the county seat of Albany County and the oldest city in the State. A statue of Peter Schuyler, the first mayor of Albany, has been suggested as the permanent memorial here.

Lower Hudson: Local celebration at Peekskill, participated in by Montrose, Crugers, Oscawana, and adjacent villages.

Saturday, October 9th

Upper Hudson: In like manner the naval parade will advance to Troy, the county seat of Rensselaer County, on Saturday, October 9th, and form the nucleus of the celebration there. A statue of Van Rensselaer, who obtained the first land grant in that section, has been suggested as an appropriate monument to be erected here.

Lower Hudson: There will be a river parade at Cold Spring, to be participated in by Garrisons, Highlands, West Point, and nearby villages.

opyright, 1908, by Irving Underhill, N. Y.

New York as the Voyager of to-day First Sees It

COPIES OF THIS MONTH'S COVER

We have a few reprints from this month's cover, without lettering and beautifully mounted. While they last they will be sent free to dentists on receipt of ten cents in stamps to pay postage and packing.

THE CASTING PROCESS AS APPLIED TO INLAYS OF GOLD AND OTHER DENTAL USES

(*Continued from July Number*)

J. G. Lane, D.D.S., Philadelphia, Pa.

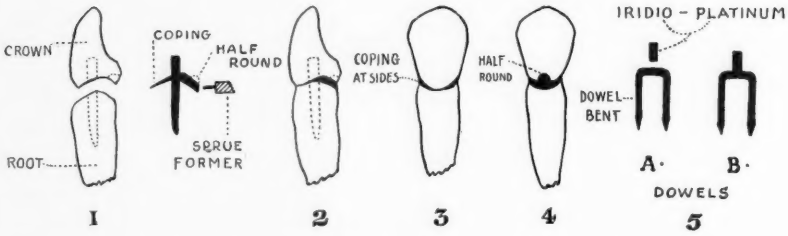
The most life-like and esthetic artificial crowns that we have to offer our patients at the present time are the all-porcelain crowns. These seem to meet every requirement except one; that is, durability at the point of union between the crown and the root on which it is placed. This lack of durability is due to the cement line being unduly large at some point or points, and subsequently washing away; or perhaps a stump may be badly broken or hollowed out on the approximal sides by caries to such an extent that the operation of properly fitting a porcelain crown to it by grinding is impossible. We believe that a perfect—or theoretical—adaptation is rarely if ever made by grinding.

The weak and vulnerable joint between such crowns and the stumps on which they are mounted may be greatly improved by interposing a disk-like casting of pure gold between the crown and the root end. This casting will be of such detail that one of its sides will accurately fit the cut end of the crown and its other side bear the same relationship to the root end. This adaptation can be as accurate as the adaptation of an inlay to the cavity walls, and may by this accuracy be made the means of reducing the cement line between the crown and the root end to so small a minimum that its vulnerability may be dismissed as being unimportant. Stumps that present irregular ends caused by fracture or caries can also be fitted with the same degree of accuracy, and with as much ease.

We are mounting an all-porcelain loose-pin crown. Prepare the root end as for the ordinary method of setting such a crown; care being taken to face the root end back to a point well under the gum margin, but not far enough to injure the pericemental membrane; the finished preparation will present a prominent ridge line extending centrally across the root end antero-posterially, and the labial and palatal aspects cut much further back (see Fig. 1). This ridge-shaped preparation adds strength to the finished fixture, and also facilitates getting the line of union well under the gum margin. Particularly is this the case with all anterior teeth. Bicuspids cannot often be prepared with a ridge so pronounced.

Adapt the crown to the prepared root end by grinding. An accurate

adaptation is not necessary, however, at this stage, although the crown and the root should approximate closely at the extreme labial edge (Fig. 3). This one point of close adaptation is made so that should the gum tissue ever recede far enough to uncover the line of union, no unseemly amount of gold will be visible. Grind out a small semicircular space on the edge of the palatal side of the crown (see Fig. 4) to allow a little more space between this part of the crown and the root end. This little space allows a heavier part of the wax pattern to come



Views of coping cast to go between porcelain crown and end of root: also dowel for making a porcelain molar crown from a diatoric bicuspid or molar tooth.

to the surface at that point; when the sprue former is inserted in this enlarged portion of the pattern, the whole will be much less liable to distortion in handling and flasking. This little irregularity also assists in locating the crown and casting on the root in cementing.

The sprue-former, in position ready to be inserted in the pattern, is shown in Figure 1.

A dowel of suitable length is prepared. This should be made of round wire. Enlarge the root canal sufficiently to admit a No. 13 gauge dowel if the root be of such size that this would not unduly weaken it. Superior lateral or inferior incisor roots could not be enlarged to such an extent, and would have to be prepared for a smaller dowel. In any case, the enlarging must be accompanied by rare good judgment as to which is going to be the weakest part of the finished operation. The root canal must also be enlarged into position to be opposite the hole in the crown. If this cannot be accomplished without unnecessary cutting, the dowel may be bent to bring it into alignment for both crown and root canal; or if the root has two canals—as in a first superior bicuspid—and neither one anywhere near in desired position, and it not being possible to enlarge either one for position or strength, enlarge both to take a No. 16 or 17 dowel in each. A dowel for such a case is made up by bending an iridio-platinum wire

of a size suitable for the enlarged root canals into a U shape—having the two extensions parallel, and properly spaced to fit into both canals. The ends should be of such length that the bent portion will lie closely on the cut end of the root and not interfere with the crown. A larger wire of iridio-platinum—13 gauge—is now soldered to the bent portion of the U-shaped wire in such position that it will be lined up for the hole in the crown. The solder used for this union must be 24-karat gold, and put on at a high enough temperature to almost melt the platinum (dowel is shown in Fig. 5).

Platinous gold may be used for dowels if the size is not less than No. 13 gauge. A large casting of 24-karat gold on a smaller bulk of platinous gold is very likely to injure the latter immediately next the casting, and thus weaken it. The union between a gold casting and a platinum dowel is not likely to be a fused one unless gold has been flown over the surface of the platinum dowel beforehand with a blow-pipe. In no case should a casting be made on a base metal pin. This precludes the use of nickel, of nickel alloys, or of platinoid for this purpose.

Having the root, crown and dowel thus prepared, the cut end of the crown is further prepared by coating it with oil and the dowel by having melted fast to it in proper position a small disk of base plate wax (inlay wax is not suitable for this work on account of its friability). This wax should be sufficient in bulk to complete the adaptation between the root and crown. Warm the wax and assemble dowel, wax and crown on the root, and press on hard enough to bring the crown into contact with the cut end of the root at the point described earlier in this article, and at the same time be in proper position for articulation and alignment. Chill with water and remove. Should the dowel and wax remain on the root they may be removed by taking hold of the free end of the dowel with tweezers. Any wax that may have been forced up along this part of the dowel will be more or less injured by the tweezers, but this will not matter. Assemble the dowel and wax on the crown, and with suitable instruments cut or melt away the surplus wax that has been squeezed out beyond the cut edge of the crown. An impression of the root end will be on the opposite of the wax and will show where to cut for the root margin. Re-assemble to correct any distortion caused by removing surplus wax, and perfect the marginal adaptation of the wax to the crown and root end by burnishing. Remove, insert the sprue-former in position as shown in Figure 1, invest and cast.

Treat the surface of such a casting with the same care and diligence that would be bestowed upon an inlay; remove any tiny nodules of gold

that may not belong there; grind and polish the edge of the casting while it is assembled on the crown. Assemble the whole on the stump, and further adapt by a sharp blow with a wooden mallet on a cottonwood stick that is being held against the point, or masticating surface of the crown. Search for overhanging margins, and if any be present they should be removed before cementation. Having all in readiness, the union between the casting and root, and that between the casting and crown are both cemented at one operation.

This casting *cannot be burnished immediately after cementation.* It must have had its margins burnished beforehand. Remove surplus cement, and the operation is completed.

All-porcelain crowns may be mounted on molars in practically the same fashion. Select a diatoric tooth that has no groove running up on its palatal or lingual side; close the two little holes extending through antero-posterially, by fusing in porcelain. Grind the crown to get a suitable adaptation to the root. Prepare a dowel by bending a hard platinum wire—of suitable size—so that it will fit into two root canals, and having its bent or looped portion standing high enough to come well up into the recess in the crown. Should this recess be retentive in shape, render it otherwise by adding modelling compound to it wherever needed while the crown is warm. This compound would have to be removed before cementing the crown in position. Form the wax pattern on the bent portion of the wire, make the proper adaptation between the stump and the crown; invest and cast. The other details would be as described for the former ready-made crowns.

Shell crowns may have their cusps made and fastened on at one casting operation, and ordinarily, without model or articulator.

Fit the band to the stump in the mouth—getting the proper contour on all sides, and particularly for contact with its neighbors; cut it low enough to clear the occlusion by about the thickness of blotting paper. Protect with napkins, and fill the band while *in situ* with a suitable quick-setting investing material (this can be almost set when packed in); level the latter off to the edge of the band, and clear it away to form a little groove immediately within the edge of the band. With hot air, dry the surface of the investing material thus placed, and flow over it yellow beeswax—using a very hot spatula—and also flowing full the little groove that has been cleared away next the band. Now take a larger mass of yellow beeswax, warm the same until it is as nearly melted as can be handled, and quickly stick it fast on the wax that has been flown over the investment in the band. Remove the napkins and have the patient bite. Remove the larger surplus of wax and have patient bite again, getting the effect of all the various

rotary movements in mastication. The band, investment, and wax are now removed as a whole from the stump, the little finer finishing to the margins of the wax completed, sprue-former inserted *in the point of a cusp,* and invested. The investing material that was previously placed in the band is allowed to remain, and thus become a part of the final investment; no matter if the inside investment is not the same compound as that of which the final investment is made.

If it is desired that this work shall be done on a model instead of in the mouth, the band would be fitted and contoured just the same. Insert a mass of soft wax or modelling compound in the open end of the band; have the patient bite and rotate the bite so that all the necessary shape will have been made in the wax. Place on the articulator and proceed the same as if working in the mouth.

It is imperative that the flask for this work should be heated exceedingly hot at the moment of casting or no fused union will be effected. The cusp should be made of the same material as the band, and the joint in the band must have been sweated. A soldered joint will not stand this kind of treatment in make-up.

The little groove described is for the purpose of allowing the cusp to form down inside the edge of the band so as to get more contact and a better union. Even with the utmost precaution the union between cusp and band may not be fused. If in finishing a line shows at the point of union, that union is not a fused one, and must be soldered from the inside.

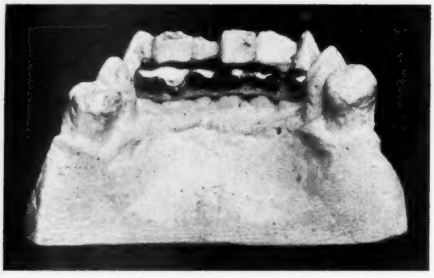
In any operation of crown or bridge casting, we do not favor casting against porcelain unless there seems to be no other convenient method of attaching the porcelain. For crown-work we advise the use of any suitable loose-pin crown; making the necessary wax pattern and casting separate from the porcelain. In bridge-work we advise the use of either long pin facings, or long pin saddle-back teeth; these to have pins and surface oiled so that they can be removed from the wax pattern; they would afterward be fastened in position on the casting by means of an oxyphosphate of zinc. The pin-holes would be cored in the casting by inserting tiny graphite cores in the holes in the wax, and having their free ends extend far enough to allow the investment to hold them in position after the wax pattern is burned out. These cores would have to be drilled out of the casting.

Graphite rods suitable for these cores may be found in the very tiny lead pencils that are used at dances and card parties, and may be removed from the pencil by soaking the latter in water for a long enough time to dissolve the glue that holds the pencil assembled. Steele's facings may be used nicely in making bridge-work by the cast-

ing process. The backings—which must be of gold or platinum—are flasked with the wax pattern and the casting made.

The casting process does not give us the same step of advancement in bridge-casting that we had hoped it would, or as much as it has done for many other lines of our work. The body part of a cast bridge is good, but its cast attachment to the anchorage fixtures is not secure unless such unions are afterwards soldered. This soldering for anchorages almost invariably necessitates investing, and thus seems to make double work. It is not wise to cast anchorages directly with a bridge unless such bridge is a very short one; or has only one fixed anchorage. The shrinkage is very likely to be sufficient to prevent proper adaptation to the teeth or stumps for which it was made.

If for want of space the body part of a bridge has to be made small, such small bulk may have a very considerable amount of rigidity added to it by adding to the gold to be used quite a little platinum. Such an alloy can be effected only by heating the mass to be alloyed to a temperature sufficient to thoroughly fuse the platinum. Otherwise we may be surprised to find that our platinum remained unfused and simply hidden in a mass and served no other purpose than to clog up the sprue opening when casting was attempted. Such an alloy can be properly effected only by the oxy-hydrogen blow-pipe, or the electric arc.



Ill. VI.—Lingual view of a cast appliance for retaining loose teeth.

Figures VI and VII show a model having attached thereto a very ingenious splint—devised by Dr. George S. Dilmore, Jr., of Philadelphia—for retaining inferior incisors in pyorrhea cases. The splint is suitably located on, and adapted to, the lingual aspect of the tooth or teeth to be retained, and to adjoining teeth for stability. (See Fig. VI.) The wax pattern may be made by pressing wax directly against the teeth, or by first getting an impression and model and shaping the

wax upon the latter. It is then cast in the usual manner. Little projections on the splint extend between the necks of the teeth; small holes are drilled through the splint in such position as to admit bolts that are inserted between the necks of the teeth, through the holes in the splint, and having their heads on the labial sides of the teeth. Gold wires of a suitable size are inserted in the holes and a wax head formed on the labial end of each. These wax heads must be of proper shape to give most support to the adjoining teeth. (See Fig. VII.) Wire and wax are removed from the teeth, flasked together, and the bolt head cast on the wire. The shank is afterward threaded with the Bryant repair outfit and the holes in the splint coned on the lingual side to fit Bryant nuts. The whole can then be assembled on the teeth and tightened by screwing up the nuts.

ILL. VII.—Labial view of the appliance shown in illustration No. 6.

If it is desirable to have the fixture cemented on, the teeth can be prepared with a coating of very slow-setting cement and the little nuts and bolts tightened while the cement is soft. After fixation the bolt and nut ends can be finished off flush with the surface.

Within the past few years it was almost impossible to procure aluminum in a state of purity, and be within commercial reach. Due course of progress in the arts has made possible a commercial output of this metal, and it may now be had in such a state of fineness that it is able to withstand the action of the oral secretions, and undergo no chemical change whatever by reason of such action. Dr. Haskell says, "Aluminum as a base for plates is superior to rubber and stands next to gold. It is lighter in weight, a good conductor of heat and electricity, and these properties make it particularly suitable for a superior base." The cause of the disintegration that was experienced in aluminum bases in years gone by was due to contamination with, or presence of,

some other metal, resulting in a weakened power of resistance, or in galvanic action.

An aluminum base should be cast directly upon the original model; it will thus have any and all definition, details, etc., that a rubber base would have. It should have a marginal rim formed on it against which the outer edge of the rubber used in attaching the teeth will finish, and be retained; also a rim in position for a similar relationship to the inner margin of the rubber. These rims add very much to the rigidity of a base, and mean a decided advantage over swaged work.

ILL. VIII.—Model prepared for casting full upper denture.

Undercut cases may be fitted with absolute accuracy, while in swaging such cases this same accuracy of adaptation would be impossible. The working model should be made of a mixture of plaster and sand (preferably red bird-gravel) in the proportion of one part of model plaster to three parts of sand. If it is desired to have a vacuum chamber, this must be cut in the impression, so that its form will appear on the model (see Fig. VIII). The plate is waxed up for a thickness of approximately 20 gauge. The rims we have mentioned are finished with a more or less retentive edge on each looking toward the space for the rubber; the possibility of retention of the rubber is augmented by cutting lines as shown or by spurring the surface in both directions; the inner edge of the inner rim is bevelled off to the base proper, in such manner that it will make a continuous surface between the latter and the rubber at this point. The wax that is

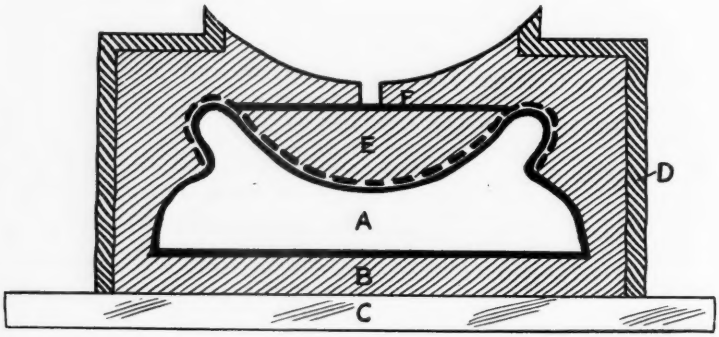
placed *in situ* to form gates should have several places of attachment to the plate, and in such position that these places of attachment will be covered by rubber in the finished case. A stem of wax is made to extend vertically as shown to form the sprue. This stem of wax should be about 5 or 6 gauge (see Fig. IX).

Ill. IX.—Wax model of bare plate with wax gates and sprue.

Before investing for casting, place the waxed-up model in water until it has absorbed all the water it will take up. Mix investing material—same as was used for model—and place a quantity of the same on a glass slab. The model is then placed upon this and pressed down, allowing one quarter of an inch of investment to remain between the model and the slab. With spatula and brush cover the sides and top of the model and wax plate; being careful to brush the investment well under the wax that represents the gateways until nothing remains showing except the vertical stem of wax that forms the sprue. Partially fill the flask with the same mixing of investment, and at once press it down until it rests on the glass slab. Excess of investment material is forced out both at the top and bottom of the flask. After the investment has hardened cut a depression, or crucible, of sufficient size to accommodate the amount of material that will be necessary for the cast, and excess essential in any and all casting operations. The bottom of this depression or crucible should be one-quarter of an inch from the point where the sprue proper connects with the various horizontal gateways underneath.

Figure X is a cross-section of flask with case and investment, showing relative position of the various assembled parts.

The flasked case is dried, and the wax burned out in the same manner, and to the same extent, as for gold inlay work; that is, the wax



Ill. X.—Cross-section of flask containing model for casting of full denture.

Ill. XI.—Cast base still on model.

pattern and the carbon resulting therefrom must be completely burned out. Having the flask thus prepared the casting is now made. The low fusing point of aluminum makes possible its fusion with an ordinary blow-pipe. Melted aluminum does not appear to be nicely fluid.

Its fluidity may easily be determined by stirring in it with a stick. The casting pressure must be maintained until the material has crystallized. This may require thirty seconds to one minute—depending on the temperature of the investment at the moment of casting.

Figure XI shows a cast base not yet removed from the model upon which it was cast. In this—the same as in any other casting—there will be shrinkage in cooling. A small amount of reduction in the size of the base is very desirable. If the investment at the moment of casting has a temperature equal to, or above, the fusing point of aluminum, the ultimate loss in size will equal only the amount that the co-efficient of expansion of aluminum exceeds that of the investing material; and this amount will not often be too much.

ILL. XII.—Complete denture on cast base.

Figure XII shows completed case.

Aluminum may be cast directly against the teeth without injurious effect to the latter if the metal is not allowed to encircle the porcelain too much; otherwise the contraction in cooling would fracture the teeth. Blocks would surely be broken by casting against them.

(We are indebted to Dr. Robert J. Seymour for the use of Figures VIII, IX, X, XI and XII.)

Casting small gold plates is a practicable operation. Partial plates of exceedingly irregular form, or with lugs or clasps attached thereto, can be very advantageously made by the casting process. In large plate work the task becomes more difficult, and it is therefore a question whether it is or is not advisable to make large gold bases by casting. In this kind of gold casting the same detail of preparation of the case would obtain as for aluminum casting except that the sprue and

gates should be a little smaller. The same kind of model and investment material would be used. The gold used should be an alloy of gold and platinum in order to get the necessary rigidity. Teeth could be either soldered on or fastened with rubber.

The casting process carries with it so many possibilities, and such manifold uses, that a descriptive technic of the same might be carried on indefinitely. We feel, however, after having covered the subject thus far, that enough detail of principles has been given to enable anyone who is successful in the various operations we have described to carry the work forward to any legitimate limit, and work out methods for himself.

With this idea, we beg to close the series.

AN EFFORT TO PRODUCE ANATOMICAL MOULDS IN ARTIFICIAL TEETH

By E. S. Ulsaver, D.D.S., New Rochelle, N. Y.

Thoroughly satisfactory moulds in artificial teeth would be a blessing to every dentist who makes plates. An effort is being made to produce such moulds, and the results so far attained give promise of marked improvement over any others now offered.

There has been much discussion as to what is required in such moulds, but much of it has been theoretical rather than practical. What success others may meet in carving tooth forms by the guidance of theory the writer does not know, but certainly no forms so carved have met with general acceptance.

After considerable experimentation, the writer abandoned the purely theoretical considerations and set about carving moulds which should be of approximately natural proportions and form, and which should, above all, articulate properly. Let it be confessed here that proper articulation was the chief end sought, and to that other considerations were subordinated.

Moreover, there are certain details of the process of manufacturing artificial teeth which must be taken into consideration, and these indicated the wisdom of departing, in some details, from the ideal forms of human teeth.

Since the greatest need is for bicuspids and molars of approved forms, these received attention first. All the leading tooth manufacturers make centrals, laterals and cuspids which meet with general approval. It is over the posterior teeth that most of the criticism arises.

Of all the time-consuming tasks on which the writer has ever entered, this was the greatest. Hours of study were necessary to indicate the least change in forms. The mesio-distal and bucco-lingual proportions as between upper and lowers; the proper relations of cusps, fossæ and sulci in each tooth and to the occluding surfaces of the opposing teeth; the relations of these to each other during the various

Illustration of occlusal surfaces of upper bicuspids and molars.

Illustration of occlusal surfaces of lower bicuspids and molars.

movements of the jaw in mastication; the escape ways for crushed food; and, finally, the adaptability for easy and accurate articulation on dentures, presented a thousand and one considerations, each demanding its share of time and attention.

Finally, after a number of failures and nearly a year of study and work, one mould each of upper and lower bicuspids and molars was produced. It was brought out by The Dentists' Supply Co., and the reception so far accorded it is such that I have begun work on another mould.

The advantages claimed for these moulds are as follows:

1. The upper and lower bicuspids and molars are of satisfactory mesio-distal proportions.

2. They articulate properly with each other, but so far as the writer knows, neither of these moulds will articulate with moulds of other numbers.

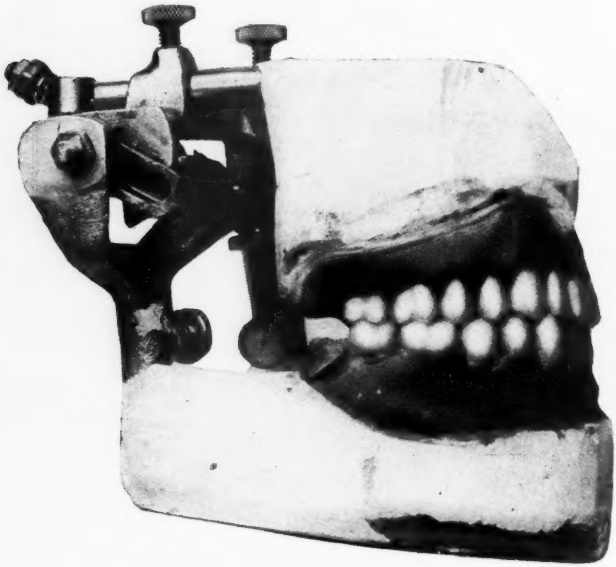
3. They may be set with less trouble than other moulds, since when either set is placed, the other goes easily to position.

4. Very little grinding is necessary to get close articulation; only a cusp here and there will need touching up.

5. These teeth are shaped to meet the requirements of anatomical articulation. It is believed that they meet such requirements better than do other artificial teeth.

6. These posteriors may be combined with several sets of upper and lower anteriors of medium size, and I understand the makers have already offered such combinations.

It is one of the peculiarities of human nature than no sooner do we



complete a task, than we see how it can be improved. Such is the case here. A number of minor improvements in form have occurred to the writer, and will be embodied in the mould on which he is now at work. Meantime, these moulds are offered as a practical beginning.

VISALIA, CAL., *August* 10, 1909.

Editor DENTAL DIGEST:

Your most admirable publication is to me an inspiration. If the dentists of the United States would *all* take it and profit by reading the department on "Business Building" it would mean an advance of 20 per cent. annually to their income, besides making better men of them. It is beautiful typographically, but pardon the inquisitiveness, if "I inquire to know" the entire meaning of the front cover. The scene is typical of a beautiful mountain stream, abounding in speckled beauties. The special object of my interest, however, is the fisherman on the bank. His habiliment denotes respectability, but, shades of Isaak Walton, what an equipment! If he is after trout, he is fishing too deep—if he is after suckers, the water is too swift. The aquatorial species love the placid pool—the easy life. Like the human variety, they follow the line of least resistance. An idea now just dawns on me. The man is a dentist on a vacation—one of the kind that puts in 50 per cent. amalgam fillings and solid gold crowns for five dollars, and therefore cannot afford a better outfit. Am I right?

May the DENTAL DIGEST and its editor live long and prosper!

Very truly yours,

A. T. LOCKWOOD, D.D.S.

HOW TO FILL TEETH WITH GOLD

(Continued from August Number)

J. V. Conzett, D.D.S., Dubuque, Iowa.

There are two general forms in which gold that is used for filling teeth is prepared, the crystal form and the foil. Each division has its many subdivisions, but all classes of filling gold is either a foil or a crystal of some form: and each one of the many different makes may be used to advantage by those who become accustomed to the peculiarities incident to the several different kinds. However, I believe that the man that masters the use of the gold foil has the best servant at his command.

I used to say that a man could undoubtedly make as good a filling with one of the crystal golds as he could with the foils, if he used the same care and gave the gold the same amount of condensing force: but experiments in the laboratory of Dr. Black seem to contradict that statement, for those experiments demonstrated the fact that even under the same mallet force per grain of gold the crystal golds of the various makes did not approach the gold foils in density. I do not know why it is so; I only know that the experiments demonstrated the fact, and my prejudice against the crystal forms of gold has been emphasized. The only reason that has ever been given for the use of the crystal golds is that they are easier to adapt and that a good filling can be more easily made with them. All of which is a delusion and a snare.

The fact is, that the man who is looking for the easy way to become a good operator is going to remain a poor operator all of his life. There is no easy road to success. The man that wants to succeed in our calling, as in any other, must take off his coat and go to work, must burn the midnight oil in study and strive day by day to perfect his technic along operative lines. Then, and only then, will he succeed. "Genius is a capacity for hard work," so do not take the line of least resistance and float with the current down hill, but mount ever upward upon the obstacles you have overcome.

You may make good fillings with crystal gold, but you will not do it easily. Some of the manufacturers of these golds have been sending men about the country demonstrating them; one such came into my office and assured me that he had a gold that would make my gold work easy. I told him that that was what I was looking for, and he got out his "kit," consisting of an ivory block with a cavity drilled into

it, and a set of large Royce pluggers and proceeded to pack in his gold with hand pressure. I told him that he could not make a serviceable filling in that way, but he assured me that he certainly could with this particular gold. "But," I said, "you will have no density in your finished filling, for you are not using sufficient force." But he smiled in a superior manner and told me that that was the beauty of this gold, that it did not need great force to condense. "Just place it in the cavity and with a burnishing movement of the plugger you spread it into all of the corners of the cavity and it condenses as easily as amalgam." I watched him patiently until he had finished, when I asked him if he would like to see how dense his filling was. "Yes," he said, "you may use any test you desire." I picked up a sharp-pointed instrument and with hand pressure forced it clear through his beautifully dense (?) filling. He had no more to say about his gold, but packed up and left.

Now the point of all this is just here. It may be possible to make good fillings with crystal forms; I will not deny that; but you cannot do it without giving at least as much care and attention to such a filling as you would to one made with foil. In view of this fact, and in view of the fact that I have personally never been satisfied with the fillings that I have made with the crystal forms—and I have made many—I have abandoned the use of the crystal golds entirely and use only the foils.

Gold foil comes to us in two forms, the cohesive and the non-cohesive or soft. The term soft foil is a misnomer, and should not be used, as it implies a falsehood, viz.: that the cohesive foils are hard, which is not true. Both foils are prepared from the same ingot and treated the same way until they come to the final treatment. We know that we harden or temper gold by beating it and that we soften it by annealing it. In beating, the gold is being continually annealed; when it is finished and leaves the beater's hands it is again annealed and made soft irrespective of its final treatment as a cohesive or a non-cohesive foil. If it is to be placed on the market as a cohesive foil, the gold is carefully annealed and sealed up for the user. If it is to be sold as a non-cohesive—or so-called soft gold—it is also annealed, but is thereafter treated by a process which leaves upon its surface some substance which destroys its cohesive property.

There are two kinds of non-cohesive golds. The so-called soft, that is non-cohesive until it is annealed, and the soft, that is absolutely non-cohesive and cannot be made to cohere even by the highest annealing. The only way to make such foil cohesive is to melt and re-beat it into a foil. The first is the gold that is used in my practice, and the same

foil is used as a non-cohesive and as a cohesive foil for this reason. This kind of foil is made non-cohesive by having deposited upon its surface a film of ammonia gas, and this being deposited upon the pure surface of the gold protects it from contamination from any other source. The absolutely non-cohesive foils are made by a secret process, and we do not know what each manufacturer uses, but we do know that a deposition of carbon dioxide upon the surface of a pure gold makes it a permanently non-cohesive foil.

Now there may be, and doubtless are, other gases or substances that have the same property, so if we use a gold in our operations that is not protected from contamination it may become contaminated by some of these gases or substances which are not visible to the eye, but which render the foil absolutely of no use, and being placed in a filling, unwittingly of course, will later cause that filling to break at that point or to flake off. If the gold that is to be used as a cohesive foil comes to the user as a so-called soft foil, that is, as a foil that is non-cohesive until it is annealed, its surface is protected by a film of ammonia or chlorine gas, which will be given off by annealing to a red heat, and the pure, virgin surface of the gold will be in its highest state of cohesiveness and best fitted to be used as a filling material. For this reason I do not buy the prepared cylinder and pellets, but the gold foil marked soft, and prepare it in cylinders to be used as a non-cohesive foil and into pellets to be used as a cohesive foil.

The method of the preparation of both of these forms will be given later.

The old dentists only had the non-cohesive foil and were not familiar with the cohesive variety at all. Of course they missed a great deal, and yet I seriously question whether they missed as much in not using the cohesive gold as does the modern dentist who does not use the non-cohesive. When the cohesive foil was given to the profession the members thereof were so delighted with it that they threw away their non-cohesive gold and forgot it and failed to teach its use to their students. How history does repeat itself! How many men have thrown away their gold pluggers with the advent of each new fad and then sadly dug them up again as the fad passed away into a deserved obscurity. So non-cohesive gold was discarded, and with its discard the gold worker threw aside the material that will preserve the tooth better and longer than any substance that has yet been discovered.

We are coming back to its use now in certain places, and in its place it is without an equal. "Prove all things." I have no use for the man that shuts himself up in a bullet-proof, armor-plate conning tower and refuses to come out and try anything because it is new and

maybe upsets some of his pet hobbies. The world does move and good things are continually being given us; let us test them and use them in the places indicated, but let us remember the whole text, "Prove all things," *but "hold fast to that which is good."*

Non-cohesive foil is good—nay, it is best; do not give it up. If you do not know how to use it, if you are not acquainted with its properties and uses, learn them and you will bless it forever.

SCIENCE OF PRACTICE BUILDING *

JAMES WOOD POGUE, FIELD ORGANIZER THE SHELDON SCHOOL, NEW YORK CITY

MR. PRESIDENT, GENTLEMEN OF THE CONVENTION AND GUESTS:

I am going to talk about the Science of Practice Building, especially to dentists. I know dentists as a body, and all professional men, doctors, lawyers and so on, have to win success, but professional men have a certain pride which prevents them from getting after business; but there is a right and scientific way to build practice.

I am going to talk to you to-night upon the Science of Practice Building. It is necessarily based upon identically the same principles as the science of business building in the ordinary business world.

I am well aware that the members of the various professions hold themselves somewhat apart from the average business man. That idea has been current to a degree in the past but is becoming less current to-day, because all men are recognizing more and more that business is a profession, and members of the recognized professions are likewise understanding that every man must in some way go out after the buying public.

You professional men are compelled to-day to study three things: First, how to develop the power and skill that the public want; second, how to bring to yourselves that portion of the buying public in need of your services; and third, to negotiate a mutually agreeable basis upon which you can render services and they receive them. That is identically the same principle which I am operating upon, which all high grade business men are operating upon to-day.

In other words, the central point of all your life is that of service.

* Read at the Forty-first Annual Meeting of the Seventh District Dental Society, Rochester, N. Y., April, 1909.

First, the power to render service; second, to reach those who wish the service rendered, and, third, to reach a basis of agreement upon which you can get together.

I wish we had here as many of the individual students of dentistry as we could get together in the State of New York, so these ideas might percolate into their minds to the end that they might reach the highest success in their profession. I have known of some men starving to death before they could get started; and I have known of some who never did get a good start.

What every man looks for is that he may be able to attain in his profession something that we call success. And that success, as far as I have known the dental profession, does not consist of some high ideal in some country far beyond the clouds where no interchange of cash ever takes place.

By success as a dentist you mean, first, to be able to gather that kind of skill and power that will be of service to the public; next, to be able to persuade a sufficient volume of the public to come to your office and receive your services, to pay you for all the long years you have spent in perfecting yourself to render those services. And if you be able to persuade them to come, then you must be able to persuade them to give up that which you desire, which you call cash.

Let us be frank.

We find in the investigation of business life and otherwise that all business success is based upon the volume of profitable trade that you can secure, and the emphasis is upon PROFITABLE.

Some dentists do not get much profit at all. What we want and must have is profitable trade—that which comes with the cold, hard cash.

They have my subject out here as the Science of Practice Building. We do not want simply to build up a practice. We can get all the practice we want, but we want profit along with the practice.

Sometimes I meet people who tell me that they do not care anything at all about money. I have never known but three classes who did not care anything about money. First, those who were off up here (touching his forehead), off in the upper story; the second class, those who were off down here (touching his stomach), and the third class—just plain liars. Those are the only three classes I know of that do not care about money.

There is only one way to get profitable trade, and that is by inspiring confidence in the buying public; not confidence only in your theory, but they, also, must have confidence in you. Confidence is always placed in a person, never in a thing, in the first instance.

Therefore, what you and I are to do if we build success is to inspire confidence, and we do that through our personality. Anything that enters into your personality or mine, which tends to destroy or prevent confidence, prevents our success in a like degree.

Every man in this room who is meeting the buying public knows that the one who is able to inspire the most confidence in people may not be the most skilful dentist, but he will get the most profitable trade. Have you not seen that more than once? Has it not made you feel a little sore sometimes? We want to build that kind of personality which inspires confidence, and secures profitable trade, which insures success; that is thoroughly reasonable and scientific. In that display room out there they say to us about each thing, "This is thoroughly scientific." Every product in that room is supposed to represent (and I have no doubt it is true) the highest degree of scientific excellence, which is just the excellence demanded in practice building.

I am going to say something you may not like. During the last twenty-five years science has practically exhausted itself in preparations for the preservation of the teeth, in the proper understanding of how to treat the teeth, in the best mechanical appliances to use in drilling the teeth, and so on. And men have exhausted science in order to perfect themselves in the use of those appliances for the benefit of the public; but, gentlemen, I want to say to you in all frankness that the most of those who are using those appliances have not begun to expend upon their own persons and personalities anything like the scientific intelligence to perfect themselves, whereby they may be able to convey to the buying public that kind of confidence which brings the buying public to them. Nothing like the science has been expended upon yourselves that has been expended upon the mere appliances of your profession. There is the crucial point in your work. Stick a pin there (pointing to Personality on a chart, on which he had made a pyramid of the foundation stones of Success. It read this way:

Success
Profitable Trade
Confidence
Personality
Character; Health
True Education).

How are you going to build that kind of personality? By building character—sterling character; health, robust health! and one is just as important as the other! They are the essential factors of true education.

Gentlemen, you know a great many things about your profession, but here is something that few men in the professional life of this country have yet mastered. In the investigation of these sciences in the business world we have found that in every trade transaction there are four elements—and the first element is the salesman.

You say, "I am no salesman." Are you not selling service and taking pay for it? If that is not so we will call it all off and I won't talk any more. The first element in the transaction, gentlemen, is the salesman.

(Here the lecturer made another column on the chart, which read:

Salesman
Customer
Service
Sale).

You and I as professional men are to study how to perfect the *man,* for here is the basic principle. The more man you build the more business you build, and the better business you build. You and I in these transactions have a right to build the manhood of our humanity to the highest possible degree, and in building that manhood we must build:—

Body! Brains! Soul! Will!—and if you leave out one you ruin the others.

The second element is the customer—something we do not study half enough. Let me ask you, any of you gentlemen as professional men, seeking to render service to the buying public, have you ever studied how to read the nature of that public? Is the most skilful man in this room in your profession the man who most absolutely desires to place at the disposal of the long-suffering public all the possibilities of his skill? If so, he should study how to read men in order to bring them to him, because—I say it reverently—God knows that there are a lot of people practising on other people's teeth that the public could do very well without.

And the men—we men who know, and who know how, ought to see to it that we are the ones to whom the buying public comes. That is fair to the public as well as to ourselves. So we should study the customer, his needs and nature, and how to reach him most effectively.

The third element in the sale is the article or service to be rendered; in this case, for the article, we render service, and we should understand that service so as to be able to advise the customer, when he is buying, just what is best for him in a given condition.

And the last element, gentlemen, is the sale (pardon the word).

You tell me you are not pedlers, nor agents; but, notwithstanding, you and I are selling service, and he profits most who serves best, and unless you render service you shall not be benefited yourselves nor benefit others.

You may have all the dentists that you can turn out in New York for the next ten years—and that will be a few—and all the suffering public that are coming around with aching teeth and swelling jaws, and you may be able to render all the best service in the world, unless this takes place down here (pointing on chart to "The Service or Sale"), all that which goes before does not amount to a snap of the finger.

I care not what your ability or skill, or the possibilities of your life, to the buying public, unless that happens (Service or Sale) there is nothing doing.

"Almost" sales never profit us anything, and they never profit the public. The people who come to your door and go away, never put any money in your pocket or bring worth to themselves, profit you nothing.

(Here the lecturer added another column to the chart, reading as follows:

We are to study:
Character Building
Health Building
Character Reading
Business Logic
Business Profit).

To promote the four elements described above we need to undertake these studies: Character building, the building of ourselves. We can all build our character. I am not talking just about being good—we mean much more than that. Goodness is only one element of character.

We need to study the science of life, of Health Building. I have been to a dentist's office and had so foul a breath blown in my face that it seemed that I could hardly sit in the chair.

The third science is character reading, how to read the other person's character and treat him according to his nature. You cannot handle everybody in the dentist's office just alike. How many of you ever sat down and studied the different ones and how to treat them? And yet it is so easy to read people if you just learn how.

Then comes the science of business logic. I once asked for something I really did not want and the dentist should have told me better, but he did me a life-long injury instead, for which I have suffered much.

You gentlemen as professional men need to study the science of putting your own service so that the buying public get what is best for themselves, for few of them know what that best really is.

The next essential study is business psychology—how to bring your business transaction to a close. The one thing the buying public wants of you is value in return for fee. The one thing you want of the public is fee in return for value. How often you have rendered value and did not get the fee!

The one thing the public wants is to have value in return for value. What is my measure of value as a dentist or an employee of the public? For that is what I am. Let no man be ashamed of being called a servant of the public. "He who would be the greatest among you, let him be the servant of you all," said One long ago, who is second to no man that earth ever held.

What is the measure of my value? It is not the number of years I spent at college, nor the number of hours that I spent over the tooth—nor the gold that I pounded into it—not at all. The real measure of my value is the amount of supervision that I really need on my work each day.

What is the occasion of any and all supervision? The occasion is error. The man who never made a mistake never made much of anything else, but we have no right to continue to make the same mistakes we have made before. How many kinds of error are there? Only two—mistakes of omission and mistakes of commission: doing the things we ought not to do and leaving undone the things we ought to do. You and I sometimes do that which we ought not to do, but more often the things we ought to do, those we do not. The things we ought to do and do not are the things that make trouble.

If you could eliminate the error from your work, thereby doing away with the necessity of supervision, you would render the perfect value to the buying public.

What is the occasion of error? Something in us, gentlemen, which we may term a negative. There are fifty-two great negatives making for failure in the lives of men and ninety-eight per cent. of men are comparative failures.

In the lives of men making a success there are fifty-two important positives, and only two per cent. of them build these to a marked degree. Nothing is small that makes for failure or that makes for success.

In Boston Harbor, in the summer of 1907, I had my own motor boat. I had never run a boat myself alone before, but after a little practice I grew somewhat venturesome, and took my boat and family and we went seven miles out to sea. Toward evening I said, "We will

go home," and I turned the boat to start back home, for the harbor, and all of a sudden the old thing quit running. I could not see anything wrong. Gallons of gasolene, battery all right, everything looked right, but not an ounce of power!

Finally my boy, who had had more experience than I, found a little screw, about the size of the lead in a pencil. He said: "I don't know as this is of any consequence, father, but you might tighten it up." So I did, with the point of my knife, and immediately I had all the power I wanted.

How many, many men you and I know who are seven miles to sea and night coming on and not an ounce of power! Nothing much is the matter. Just a little screw loose—that's all—and if they had somebody to take the point of a knife and tighten it about one and one-half times they would be all right.

I will tell you about a professional man in Boston, a Harvard graduate, who killed his success in life. There was nothing wrong with him, one of the loveliest men I ever knew. He had an invalid wife for ten years, and he waited on her like a baby, and I never heard him grumble, but he was a failure. He would get right up to you and then he would do this (snuffing). He would come right up close and snuff, snuff, and he would keep it up until he would about set you crazy. If you have a habit like that, lose it.

You and I want to succeed, and we must get rid of the negatives. They may be ever so little, but remember that one little screw or tap loose in an automobile or boat will kill every ounce of power. Tighten up, men, tighten up! You have the most perfect piece of machinery that the most perfect Workman has ever been able to turn out. There is a reason why some of us are not successful. Are you brave enough to face the reason?

Cassius to his friend Brutus said a long time ago, "The fault is not in our star, but in ourselves that we are underlings." If we want to find the cause of trouble, let us get a looking-glass and look straight into it, and we will find it there.

In the building of business success you and I are to take up a system of true education. There is much education that is false. My son wanted to go to school in Boston after he had been in the West, and he said: "They have a half dozen courses down there, and I don't know what to do." I asked him what they said, and he answered, "One fits you for this and another for that, and another fits you for life, and another fits you——" I stopped him right there and told him to take the course which would fit him for life.

In the system of true education the first thing is to develop our

bodies, and that to the very highest possible condition of physical vigor. We owe it to ourselves and to our Creator. A lot of people think religion consists in having a poor, pale, sickly body and a weak voice, but genuine religion consists in a strong, robust body, vigorous and active, and so does genuine business.

First, build the body; second, build the brain. There are four things in body building: strength, activity, symmetry, endurance.

You know how much strength it takes to extract a tooth, but do you know the great blessing to the patient in your chair of that strength that is magnificent because it is gentle?

Oh, the people I know who are losing out in life because they are always just thinking about getting ready to go somewhere and do something. No real action. Just *thinking* about getting *ready* to go somewhere and do something!

Do you ever think about the other fellow, waiting while you get ready? Dying at the stake does not compare with it. Get through with it! Do it now! And do it right! If you have not that motto up in your office, put it up.

And then symmetry and endurance. The average man is using only one-fourth of his physical possibilities and one-tenth of his brain possibilities. The average brain shows only one-tenth of the cells ever developed at all. There are a lot of dentists that are not getting anywhere near one-tenth of their gray matter to working. Get the balance working. The public needs it so badly, and there is such a chance for the fellow who gets even two-tenths working; he has so little competition, you see.

The brain consists of four powers; first to know. How do I know? All that I know is the product of sensation. I only know what I have seen, heard, tasted, smelled and felt. The more perfect my senses the more perfect my sensations and intelligence. As I build my senses and am able to see the condition and the needs of the patient, I thereby build my power for service and also build the values that I receive, and give.

And it is true, more true than you think, that many men handling nervous patients drive people just as far away from them as they can get, because they have no sensation, no idea of what the patient is undergoing.

Just think what some professional men do. I do not suppose you ever did anything like this. But a lady died in Philadelphia not long since who had been operated on seven years ago by two eminent surgeons in America. She had the incision sewed up and it continued sore, and she went abroad and all over Europe, and after much suffering

she died the other day, and then, wishing to know just what the conditions were, the family consented to an examination. They cut the poor dead body open and found inside a pair of forceps that the very notable and distinguished surgeon had left there. And this occurs more times than is known.

There are things done on that order, and you and I need to develop the powers of observation, which prevent such mistakes, and along with these the power of memory, the power of imagination and the executive powers.

And the third thing is to build the soul powers of our lives.

Going back to this same dentist, of whom I spoke, Dr. Chaffee—I remember him so well, not simply for what he did, but for what he was. When he had done his best for me—and his best was second to none—and I would rise from the chair and get ready to leave the office, he would come and give me his hand and say, "Good-by, sir, I am very sorry you had to suffer so."

That was just a little touch of brotherly kindness. You can make a man feel that you are worse than a Wall Street shark when he is in the chair, and just a little touch of kindness does help so when the agony is over.

The patient will suffer, and I know how he suffers. Nobody suffers more than the tooth patient. Remember, gentlemen, that being a professional man does not mean necessarily that a man shall swell up and strut, and think he is above feeling and such things. It is not right that any professional man should be lacking in feelings of kindness, especially the dentist. It is unfair to the profession in the first place, and unfair to the public in the second place. Preëminently a dentist should build his soul powers.

First, there is the power of faith. I want to render service—some see the suffering of the patient and do not have sufficient faith in their own judgment to go on and do what they know needs to be done. They cannot go on and do the necessary thing for lack of faith. We need faith in ourselves, faith in others, and faith in the One over and above all.

There is many a person whose life has been saved or shortened by the treatment of their teeth. You are the conservators of the best and highest interests of the public or the purveyors of much that is bad.

I have been more thankful than I can express to the dentist in Boston, who, when my little girl had to go and have her teeth filled, was so kind to her—as kind as if she were his own little sister. I could not pay him for that, gentlemen. You might hurt me and I would not resent it, but if you hurt my little girl I would resent that; but if you

are kind to her I will forgive you and I will send others to you. By this soul power of kindness you build your trade with me and with all men.

If you want to build your trade do it not only by building the brain and the grip of the hand, but by building the breadth of soul that can be strong and yet be kind.

Build also faith in God that gave the skill, that gave the power, that gave the privilege of service; for, gentlemen, I know nothing this side of heaven greater than the privilege of serving my fellow men. And along with that, genuine ambition to go on and climb to the top of our profession, willingness to pay the price for climbing—for climbing always costs.

Oh! the men I know who got their skill and practice, and kept practising and continued to practise—who never did anything more. They have no ambition to climb. They never inform themselves, and never study the things that make for the good and benefit of all, thereby most benefiting themselves.

We are to develop ambition as a soul power, and this is just as legitimate as any other power, and with that love and kindness toward everyone we touch, knowing that no service is good service unless two people are satisfied—the buyer and the seller; the one who serves and the one who receives.

The next soul power is reverence, which is preëminently needed in the lives of professional men. I do not care to go into the other side. Remember this: If you as professional men would render the highest service and build the highest possibilities in your own life, cultivate reverence. Reverence for what is clean, reverence for what is pure, reverence for what is holy. And see that your life is as the life of the purest that lies there in your chair to receive service at your hand. See to that, men, because it is important both for you and for those you serve.

And the last division is the will power, if we would build great success, for we must execute those things if they are to amount to anything. I know of scores of men watching the clock to see how soon they can quit—wearing out their eyesight watching for quitting time.

Those are the things you and I are to study, recognizing this: that life and the gift of life is in itself a privilege, and in addition to life the privilege of service is the greatest thing man can possibly enjoy. And you and I in the profession which is ours should remember this: that the great thronging mass of humanity know little of the possibilities that our lives have for us. They have enjoyed little of the opportunities we have had. They see little of the future possibilities

we see ahead of us. You and I as part of the educated class, walking through this world, will achieve the highest success and receive the highest financial reward—as every other kind of reward—by conserving the highest interests of humanity while we serve.

I thank you for the privilege of meeting you, and for the pleasure of witnessing to your service, and for those who stand ready to serve, as men whose skill is needed to render the highest possible value for the least possible pay that is right and proper that they should receive as men for God's service. I thank you.

QUESTION MEETING AFTER THE ADDRESS:

Dr. J. V. Anderson, Kane, Pa.—It was a good sermon, but now I would like to ask the essayist a question. You tell us of the necessity of studying our own lives and developing the highest type of gentleness there is in us. The question is, when we go to church, or meet our neighbors anywhere, we hear something like this: "Look out or he will do you." "He will do you, look out for him," and wherever we go people guy us because we hurt, we are brutal. We get it from all sides, and now that joke begins to wear a little on the nerves of neurotics after fifteen or twenty years of patiently and persistently trying to fill teeth.

A lady sat in my chair and said, "I think you are awful rough," and I had not touched her. How are we to develop that spirit of gentleness with the antagonistic spirit on all sides?

Mr. Pogue.—I will answer that question by two statements. First, there is some definite ground for a common practice of criticism—the common opinion of mankind that dentists hurt. It is an established fact in the history of the world, sir, that what is a common practice of humanity becomes a law, right or wrong. It becomes a law and there is always ground. Now there are dentists who are ever so kind and gentle. They are suffering for the mistakes of some one else.

Sometimes the buying public might be at fault, but we are dealing with the buying public, just the same. The buying public is the fellow that has the cash in his pocket, and we have got to have it, and the thing for you and me to study is not our right in the matter, but how to counteract the conditions that prevail. And the man who most persistently studies those ideas and puts them in his practice is the man who is going to build the largest practice and have the most dollars in his pocket.

Dr. McCall.—I have no question, but simply wish to bring out the point Dr. Belcher has referred to—that we are not to work for money

alone, and do not measure success in terms of cash, and every one of us know of men who are giving time and service for which they will get no monetary return. There is not a dental meeting held in the country for which some one does not give time and money and give something to other practitioners for which he receives no return in money. I do believe that there are a great many men practising dentistry in this country who do not measure their success in terms of dollars and cents.

We cannot live without money; but we have two things that we are working for. We are able to accomplish our ideal and serve humanity, and relieve pain and prolong the lives of our patients and give them happiness. And if we serve them successfully, we *are* having success whether we get the dollars and cents or not.

Mr. Pogue.—I know many men in the profession of dentistry and of medicine and law that for the greatest service they have ever rendered never received a dime. The man I spoke of to-night has treated many a poor man and woman and child, and did as good service as he ever did for those who paid him, without charge. I am not speaking in the sense of money grabbing at all. There are two sides to the question. The cold, hard, business side and the high, beautiful ideal. Those two sides ought to be in the nature of every man.

Dr. A. McAlpine.—I was unfortunate enough recently to occupy the place of my own patients in my own chair. And many things were brought to my mind and attention that I had forgotten in my business practice myself. If we ourselves could take the place of our patients and have dental operations, we would appreciate the feeling that our patients have which otherwise we cannot.

My son did a little work for me, and his somewhat flippant manner of speaking of it was quite annoying to me. I hope he is not here, but —looking around—he is. I believe patients do not always feel and see things as we do, and we sometimes forget—and it would be well for us to stop and look inward occasionally.

I have thought many times of drawing up a few thoughts and putting them on paper, and I am more favorably impressed with the importance of the idea after an operation myself.

I heard a lecturer on the Emanuel theory, and he happened to see me, and knew me to be a dentist, and asked me if I did not often find that I could impress my patients that I was not hurting them; and I said yes, in a measure I could do so; but if we carry that too far we excite a feeling of resentment in them that will defeat the very thing we are after.

I think we should put ourselves in our patients' places, and recog-

nize to a certain extent the importance of even a trifling operation—but at the same time not magnifying it.

I was glad to hear Mr. Pogue speak of the physical phase and the moral phase of our standards, and advocate high standards. Our mental condition depends on our physical condition. I heard Mr. Fletcher's lecture a year ago and accepted his theories at that time, and believe the results are wonderful. I think if you did not put into practice what he said, you will make a mistake. I have done so myself a great many times.

Dr. Belcher.—I would like to ask the opinion of the speaker upon a point not in the address, but which bears very closely upon it, a subject the dental profession possibly ought to face.

A short time ago a man of affluence in this city was in my chair and asked me about a neighboring dentist, saying, "What kind of a fellow is he anyway?" His servant had gone to him, and he had charged that servant eighty dollars for a bridge, and he said the dentist had a perfect right to charge *him* eighty dollars or one hundred and eighty dollars, but that he had no right to charge any servant eighty dollars.

I think the large majority of the profession regard service as having a standard value, and people expect to pay a fixed price. It is true that a great many dentists in working for servants discount their bills, but do not increase the bills of those who can pay.

Mr. Pogue.—It is a difficult problem. I have known a good many who charged according to the ability of the patient to pay; but, on the other hand, there is a manifest injustice in that. We all know if we go into a dry goods store we have to pay at least two per cent. on whatever we buy to pay for those other people's contracts that they did not meet at the store. I am charged with that; you are charged with that. It is unfair to make one man pay for what the other has.

But here comes a poor man or woman, suffering, and you and I know our actual dental expense is only so much, and now that is a privilege of the kindliest of professional men to tell them what the price would be, but that out of consideration for their condition we simply discount their bill so much. I have done that in a great many instances in my own life.

I believe in showing consideration to the poor if they are really poor.

One can work great cruelty by refusing to treat a patient who is not able to pay. They are sometimes made to pay in advance, and that is of course cruel. I have known high grade dentists, who said, "I recognize the fact that you are unable to pay for this, and I will

give you the best service I am able to render, and I will ask you to pay me so much, or just what you can." I trust everyone understands the thorough sympathy with which I speak. I suppose probably yours is the most ungrateful of all the professions. I think people begrudge about as much what they pay to the dentist as to any professional man on earth. They feel sore, as the Doctor back here feels about his own son. I guess the boy was getting even.

You, as men in your profession, know there are certain malpractices in the profession, and I am glad in these meetings together that we can take up these subjects and discuss them, because all professions can be elevated above what they now are, and that is the idea we have had, too, in the elevation of the plane of service.

The question has been raised here about success and what it consists of. I will give you in four strokes of the pencil what I consider success, True Success.

Success

First, success means long life.

Second, Competency—Cash!

I saw that in Massachusetts somebody died in the poorhouse one hundred and nine years old. That was a shame. When you get old, gentlemen—when the hair is gray, or when there is no hair at all—we ought to have enough of this world's goods laid away to take care of us, and when the time comes to lay us away, enough to give us a decent burial. God keep me from that day with old age and poverty and the grudging funeral at the hands of others.

Long life—Cash—Honor.

Gather gear by every wile that is justified by honor. I do not want a penny of any other man's money, except as I obtain it legitimately. But I know men who are rich, whom nobody respects, and that is not success.

Love! Life would be awfully poor to me—whatever I have or hope to have—if it were not for love.

And then Reverence. Reverence for the things that are high, that are noble, that are beautiful—for the things that are good.

Reverence, gentlemen, for the highest and the best, and for the purest, for the noblest and the Divinest in life.

These five elements constitute true success. Let me repeat them:

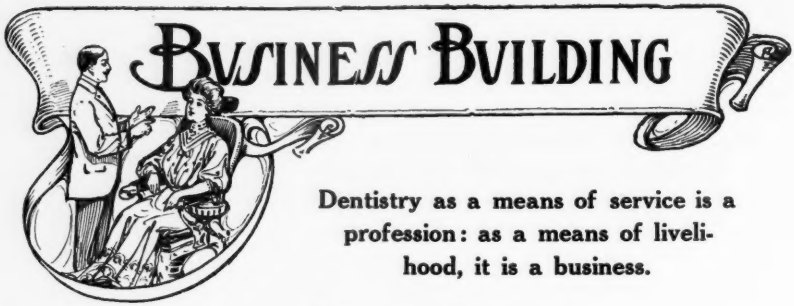
Long life, with health.

A competency in cash saved.

Honor in yourself and by your fellow men.

Love.

Reverence.



Dentistry as a means of service is a profession: as a means of livelihood, it is a business.

COMPETITION

FREDERICK CROSBY BRUSH, D.D.S., NEW YORK

THE difference between competition in commercial life and in professional life may be summed up about as follows:

In commerce, a man strives to produce a better article for the same price, or the same article for a lower price, which he may be enabled to do by a closer attention to details, thereby lessening the cost of production and distribution or increasing the output. But there is always figured into the cost a proportionate amount of the salary account and into the selling price a percentage to cover a profit and loss. When the cost of production has been reduced as low as is practicable, competition along that line ceases and a generally recognized cost price becomes established. Thereafter competition is *upward,* each producer striving for a better article for a higher price; but the selling price is always based on a thorough knowledge of the cost of production and distribution and a suitable allowance for probable losses and a fair profit.

In a profession, competition usually consists of learning the minimum fees that have become customary in the place where one locates and then endeavoring to obtain a *clientèle* by accepting such fees or less, very frequently less. These fees, which correspond to the selling price in commercial business, are established without any knowledge of the actual expenses involved in an operation, with no suitable allowance made for profit and loss, and no thought of figuring on a suitable salary or income for the operator. If at the end of some stated period there happens to be any cash left after the pressing bills are paid, the professional man proceeds to delude himself by calling it profit, and he and his family exist, we won't call it living, on this amount, whatever it may be and however it varies. If the man happens to have

good breeding, a favorable address and gets in touch with people of some financial means, he may find it easier to get established and have a little larger cash surplus than his neighbor, but the methods underlying the conduct of his practice will be identical with those of his less fortunate brother and absolutely faulty from a logical or an ethical business standpoint.

When a dentist purchases supplies from a dental depot he finds that the price of each article has been fixed as a result of an accurate knowledge of all the details connected with the cost of the production and distribution of that article; but when he, in turn, disposes of that article, to which a certain amount of his knowledge, skill and labor have been added, he fixes the cost to the patient by what he guesses it may be worth or by what he thinks the patient can or will pay.

In other words, competition in commercial life is based upon definite business principles, which should underlie all transactions; while in professional life it is based upon the willingness of one man to accept less than another. But, some men will say, the same principles that apply in commerce will not do in a profession. Only another way of saying they don't know how, that's all. The principles that should underlie all business transactions are as fixed as the firmament, but if a man has not the knowledge of them or the courage to apply them, that is another matter.

Recently there came to me a young man seeking information and advice on how to conduct the business side of his practice. He was a clean-cut, wholesome fellow with an attractive personality; in fact, just the kind of a chap who would be picked out as one likely to succeed. He graduated about seven years ago from one of the Western universities and returned to his native place, which is one of the largest and most delightful home cities of the middle West, where, owing to family and social connections, he was enabled to at once establish a family practice. After a time his parents built a new home in a still more desirable neighborhood, and into this house was incorporated a suite of offices that are as near ideal as one could wish. In a short time his practice had grown until he was busy from early morning until late at night, and, as many of the patients were social friends, he was many times asked to work on Sundays and holidays in order to be accommodating. He takes an active interest in the local dental society and is on the best of terms with his neighboring practitioners, frequently inviting them to his house for an evenings' entertainment. He considers himself strictly ethical and is jealous of his professional reputation. Having no business expenses to meet except for materials and supplies, he has been enabled to put aside a little money, which has

given him an opportunity from time to time to take various post-graduate courses and keep fully abreast of the times. In fact, he is looked upon as a decidedly successful young man.

But now the scene changes because he has reached the "parting of the ways." He finds that at the end of seven years his practice is so large that he can take care of it only by working steadily from early until late, leaving him no time for recreation by daylight, and that he has broken down three times from the strain. In spite of all these long hours and hard work he has from one excuse or another been making and keeping his fees so low that his gross receipts amounted to only about three thousand dollars a year. He is about to marry and assume the responsibilities of his own household, and he suddenly awakens to the fact that a gross income of three thousand dollars is not sufficient to meet all of the increased expenses and allow him to continue to live in the manner he has established. He feels that he must increase his income, but that he cannot work any more hours or do any more work within those hours, for he has already over-stepped a safe limit; so in dread consternation he asks the question: "Where am I at and what am I to do?"

"As Ye Sow so Shall Ye Reap"

This young man went into a settled community without the slightest idea how to discover the cost of an operation or the value of his own services, and because his parents were able and willing to provide him with an office and a home and meet many of his other expenses, he was willing to render his best services for whatever he happened to think a patient might be willing to pay. Naturally, he soon obtained a following and was talked about in the community as a dentist that did good work at wonderfully reasonable prices. He thus entered into competition with men who had office expenses to meet and families to support, and became a means of establishing in that community such a low scale of fees that it became not a competition for supremacy but a struggle for existence among all the practitioners. And yet he felt that he was strictly and entirely ethical, an honor to his profession, and doing much more than his part in elevating his profession in the eyes of the public.

Now let us analyze the young man's situation from a business standpoint and see if we can discover where he was wrong. Had he started in a commercial business, he would have invested his capital in a stock of goods and the necessary accessories whereby to dispose of them. He would expect the business to pay him interest on the investment, and this would be figured as one of the fixed expenses when

determining the selling price of the goods. Having chosen, however, to enter a profession, he invested his capital in the necessary education and office equipment. To obtain this education requires four years, during which time, if he had been otherwise engaged, he would have earned at least one thousand dollars a year, or so that a four years' course, including tuition, books, etc., would make an investment, in round numbers, of five thousand dollars. The office equipment will take at least another thousand dollars, making a total investment of six thousand dollars. Interest upon this at five per cent. amounts to three hundred dollars, which becomes one of the fixed charges every year. An allowance must be made for the depreciation and renewal of the office equipment, usually ten per cent.; this will add another hundred dollars to the fixed expenses. Rent for a suitable office in his neighborhood would be seven hundred dollars a year. Gas, electricity and telephone would be about one hundred and seventy-five dollars. Insurance, dental supplies, stationery, postage and incidentals would amount to about twelve hundred dollars a year. With no allowance made for the services of an attendant or provision for a fixed salary for himself, we find that the total yearly expense account amounts to twenty-four hundred and seventy-five dollars, which deducted from his gross receipts leaves six hundred and twenty-five dollars to represent his salary and profit and loss—about twelve dollars a week, less than the wages of an untrained clerk. Because someone was able and willing to shoulder the greater part of this expense and leave him his gross receipts for spending money does not change the situation from a business standpoint one iota, nor make it one whit easier for his neighbor, who has a family to support, to compete with the low scale of fees that he helped to bring about. Is it any wonder that a high-minded young man, whose chief aim in life is to be thought well of by his fellows, should be discouraged and disgusted when the facts are pointed out to him, and that he should bemoan the fact that he was not taught good, sound business methods along with the rest of his professional education?

At the end of his two days' visit he was enabled to see how completely his salvation rested in his own hands and how easy it should be for him to increase his gross receipts one or two thousand dollars the first year. He is going back home, determined hereafter to compete *up* instead of down, and try and do his part toward making dentistry a profession that will yield its practitioners a good professional income instead of an amount that is less than is paid mechanics in the ordinary trades.

DENTISTS AS BUYERS

If dentists were as good buyers as the most of them are spenders, all would be wealthy. Most of them spend with free hands and happy hearts. But few seem to perceive that behind the glad spending must run a line of good business practice or the spending will sometime suddenly and permanently stop because there is nothing left to spend.

It is usually recognized among merchants that financial success comes very largely from intelligent buying of the supplies or merchandise necessary to the business, both as to the quality of goods bought *and the terms.* The shrewd merchandise buyer fights for an extra 2 per cent. or 1 per cent., or even ½ per cent., discount for cash. Offers at which the dentist would turn away in scorn are eagerly sought by him as the corner-stone of money making.

As this article is being written there returns from Europe a member of a New York firm which has made a very rapid success in its line. This member journeyed to Paris to get an extra discount, *not equal in per cent. to that quoted regularly to dentists.* He came back delighted because he had secured an additional 5 per cent. on conditions which will compel him to borrow many thousands of dollars to meet the payments. While this member was in Paris, the acting manager borrowed, at one time, $15,000 with which to discount the current bills, which he had not funds to pay.

It is much better business to borrow money with which to take all discounts at their maximum than to allow bills to go to maturity simply because one has not the money in hand to pay them when presented. The firm mentioned above has large and expensive show-rooms on Fifth Avenue in New York City. It is expected that the profits from discounts this year will pay the rent of these rooms.

Numberless incidents of this sort might be reproduced as the ordinary practice of the business world. Shrewd buying and prompt payments lay at the root of every mercantile success. Good buyers watch the pennies and the dollars watch themselves.

In some cases this intelligent form of buying has been adopted among dentists. But extensive investigation shows that it is only in rare cases. Most dentists are very poor buyers because they are very poor payers. They contract bills readily, but rarely provide ready funds for prompt payment. The discounts quoted them for prompt payment would be regarded by any shrewd merchant as very large. The merchant would immediately borrow of his bank the money to pay the bill and secure such discount; and of two merchants dealing side by

side, the one who took such discounts could put the one who did not, out of business. But because the amount involved is not large, the dentist thinks it is not worth while to struggle for the funds and lets the bill run to maturity and perhaps longer.

Let us take some actual figures, that we may get at definite values. Reports from various sections of the country indicate that the average monthly purchases by dentists, exclusive of precious metals, amount to about $20. These figures were arrived at as follows: the managers of a number of depots each averaged twenty-five accounts, purposely excluding large accounts, and sent their averages to the writer of this article. The averages sent in from different sections of the country were then averaged and the final sum was as above. This figure then may be taken as representative.

Is it worth while for a dentist buying $20 per month to discount his bills? Isn't it more trouble than it is worth? Let us see.

Suppose the dentist puts that $20 out at interest. His annual return from any safe investment will not exceed 6 per cent., or $1.20. But let him use it to discount his monthly dental bill and he will get 40 cents discount the first month. During the month he will sell to patients the materials he purchased with the $20, and should so conduct his collections that he will have the $20 again in hand plus his profits when the materials are used. He discounts that month's bill and gets 40 cents more. At the end of the year that $20 has earned $4.80, or 24 per cent. on the capital. This is four times the amount of interest received from any safe investment and six times the amount a bank pays.

Some dentists figure that they have more than $20 invested because they pay twelve bills, but the accepted form of figuring among bankers and other financiers is that $20 is the total investment, because one $20 bill can be made to carry the business. That is, $20 pays for the month's purchases. The sale of these purchases during the month produces again the $20 necessary to pay for a new supply and the sale of his services produces the dentist's profits.

The trouble is that dentists too often scorn so humble a sum as this $4.80 gotten in installments of 40 cents each. It is just this scorn of small amounts and hatred of the trouble necessary to get them that renders their business conduct so unprofitable. Forty cents pays only for small things, an extra plugger or something like that. But a practice buying only this much is a small business, and small leaks may readily drain away the entire capital.

Furthermore, paying promptly requires that the dentist collect his bills promptly.

And in the failure to do this lays the secret of the whole trouble. Our professional predecessors were usually poor collectors, and we are their true descendants. From lack of business sense or of the nerve to put it into practice, we are mostly wretched collectors. We labor faithfully, we use up the supplies we purchase, but when it comes to claiming prompt payment as our right we lose our nerve and too often let the patient pay when he will. Of course it is then hard for us to pay promptly. And thus we are ground between the upper millstone of those who owe us and the lower millstone of those whom we owe. A superficial examination of our assets shows that most of us are ground exceedingly fine. And the fault is ours—ours—ours.

The discount quoted to the dentist for prompt payment at the end of the month is the smallest of several quoted to him. The others, when figured out, make possible such savings as are the wonder of all merchants. And they look with little less than scorn on the man who neglects them. They think him a very poor business man indeed; in their eyes he deserves to fail.

To the dentist who buys $25 worth of supplies (other than precious metals) at one time, for cash, Dental Depots quote 5 per cent. discount. The dentist we are considering buys $240 worth of supplies of such a year. If an extra discount can be obtained by buying this amount in purchases of $25 instead of $20, business sense would indicate that form of buying. Thus he would buy the $25 worth $9\frac{3}{5}$ times during twelve months, with a saving of $1.25 each time or a total saving of $12 on an investment of $25, because, as we have seen, $25 is all that he has invested. This is a total annual profit of 48 per cent. on the capital involved. Surely the man who neglects this is little less than financially asleep. But great as this is, it is not all. For with $25 of purchasing capital, he may take advantage of quantity rates on certain staple lines of supplies. A certain widely used line of amalgam is quoted at $2.50 per single ounce, 5 ounces for $10. This means that if Dr. A buys 5 ounces at a time on a $25 purchase and discounts the bill he pays $1.90 per ounce net, while Dr. B, who buys an ounce at a time and lets the bill run, pays $2.50.

Dr. A thus saves 60 cents an ounce, or nearly 32 per cent. of the cost of his amalgam. The figures for several other lines of supplies in constant use show nearly equal returns. In other words, any dentist who can command $25 and so conduct his collections as to have it back when the supplies are used up can make eight times as much as the bank or any other safe investment can hope to pay him.

Joined with his high rate of savings is linked perfect security. He has his money or his supplies always in his own hand. Better than any

mines, oil, rubber or other speculative investments are the returns that lay within his easy reach simply by paying his supply bills and taking his discounts.

It is hardly necessary to go on to figure out the savings resulting from the deposit of $90 with the dealer and the securing, at the very start, of $11\frac{1}{11}$ per cent.

For our average buyer this nets nearly 33 per cent. without taking advantage of any quantity rates. Many of the large buyers make 50 per cent. per annum on these terms. No wonder they prosper and that they often quote fees that are the wonder and despair of competitors.

How simple is the prescription for such profits. It has only three elements.

First. Get your money for what you do.

Second. Save or borrow enough money to discount your bills.

Third. Do not despise small savings.

ONE WAY TO AVOID PAYMENT OF BILLS

Here is an interesting case showing how an occasional patient will dodge payment. This man's daughter had been a patient two years before. The same service was performed at that time and the same fee charged. The bill was then paid promptly. The request for an appointment for the last service came in the usual way, and the bill was rendered to the young lady that it might receive her O. K. before being forwarded.

It is too bad not to publish the name of the man concerned, since he will probably "stick" other dentists in a similar way. He is high in the councils of the railroad which employs him, and should be above such tricks as this. Dr. Rohland may be willing to furnish his name to dentists who desire it.—EDITOR.

To the Editor of THE DENTAL DIGEST.

DEAR SIR: I wonder whether you would like to have the inclosed. It is somewhat in line with the very excellent business articles by "Bill," which I think are about the best on the subject I have ever read, and I only wish I had had the benefit of their inspiration at the beginning of my career. They are splendid, and I know will have a good effect.

The correspondence I inclose I think carries with it perhaps sufficient explanation, except that the party to whom the bill was sent is a prominent railroad official, living in another State, who evidently tried to carry his insolent railroad methods into his business dealings

with the profession, and laid aside just enough of his veneer of good breeding to lay himself open to merited rebuke.

If you think, as some of my friends do to whom I have read the correspondence, that it should be published as an example of one way of meeting such insolent and absurd communications, it is at your service.

I inclose the exact copies, so that you may know just "who" and "where," but of course the name of the official, his exact position and location, must be suppressed, for the sake of his family. I have no objections to my own name appearing in full in the correspondence, in fact I should prefer it.

Of course the "gentleman" made no response—I don't think I would have either, would you? All the same, I, as well as many of my friends, have had more than $2.50, plus the postage, worth of fun out of it already, so he don't owe me anything any more.

Yours truly,
C. B. ROHLAND.

PENNSYLVANIA LINES WEST OF PITTSBURG,
The ——— Ry. Co., ——— Division.
Office of the ———,
———, ——.

———, ———.

DR. C. B. ROHLAND,
123 West Third Street,
Alton, Ill.

DEAR SIR: I am this morning in receipt of the inclosed statement, same being the second sent to me. I am unable to learn from my daughter anything with reference to this charge, being by her advised that such matters were handled by the authorities at Monticello. My bills at the school have long since been audited and paid.

I feel, therefore, that I am entitled to such evidence as will satisfy me that the work was actually done for my daughter; that the charge was authorized and approved by the authorities at the seminary; that the bill has been approved and not paid by the seminary, and that the bill being correct has not already once been paid by me.

In explanation of the foregoing, that of experience, I have learned that sometimes the bills of the different students become confused and result in an improper rendering of bill.

Awaiting your reply and advice, I am,

Very truly yours,
———, ———.

————————, ————————, Esq.,
————————, Ky.

DEAR SIR: Yours of the first received. I have no special business understanding with "Monticello." They have been good enough to have sufficient confidence in me and my professional integrity to permit pupils needing my services to employ me, but they do not undertake to collect my bills, and I never send them direct to them unless requested to do so by the patient. Neither do they, so far as I am aware, feel called upon to pass on either my services or my fees.

You seem to have a remarkable thirst for information in this case—you want about twenty-five dollars' worth of evidence to establish a $2.50 bill. Inasmuch as the services were rendered May 30, 1907, and the statement has been forwarded five times since then, it would seem to a man up a tree as though such a keenly alert business man, as the tone of your letter would indicate, who audits his bills, and pays them, might have satisfied himself by this time whether this bill was paid or not, and thus avoided perpetrating a communication that, to say the very least, is in very bad form.

The services were rendered—my books show the account not paid, also that statements were sent May and August, 1907, and January, April and July, 1908. If you still think you have a better claim to that $2.50 than I have, and that this is merely, as you have intimated, an illegal attempt on my part to separate you from your hard-earned money, keep it, and I will transfer the account to the "Deadwood" column, where it will receive no further attention from my bookkeeper.

If, on the contrary, you conclude to pay it, add sufficient to cover the postage I should not have been called on to expend in reminding you of your indebtedness.

Yours truly,
C. B. ROHLAND.

COLUMBIA, TENNESSEE,
July 21, 1909.

Editor of DENTAL DIGEST,
No. 47 West 42d Street,
New York City.

DEAR SIR: I have read with a great deal of interest the valuable articles printed in your journal pertaining to the business side of dentistry. In my opinion this phase of our profession has been sadly neglected in the past, especially so since there is more business tact, or salesmanship, involved in dentistry than in any of the other known professions.

For nearly six years I groped in the dark trying to solve the perplexing question of fees and practice, and with this vividly in mind it prompts me to give my experi-

ence with the " Big Idea " in a town of 8,000 inhabitants, hoping that it may be of some possible aid to some of your readers.

The " Big Idea " was first conceived by me about eight months ago, since then I have doubled, tripled and quadrupled some of my fees, besides doing a greater percentage of high class work than ever before. This was accomplished without the loss of a single patient to my knowledge, or the sound of a single complaint, but, on the contrary, I find these patients more loyal than ever before.

My results were mainly obtained by careful application of the following:

By trying to educate my patients to where they could appreciate the value of sound teeth, the difference between skilful and unskilful work, valuing my services at a respectable figure, and never making a claim or statement that I could not substantiate.

When a patient presents herself she is usually ignorant as to just what is best, but in my practice I have found this average patient, before she (but generally he) gives his consent to have services rendered that run up in the hundreds, wants to know the " *Why* " for all this.

It is here that you must educate him so that he may realize the value of sound teeth, and the great importance of thorough mastication of food. Or, on the other hand, the grave results that may follow, and do follow, by having an unhealthy, filthy condition of the teeth or gums.

What dentist is it who has not pitied the patients who lost their teeth through pyorrhea, and where there has been excessive resorption of the process, where the most skilfully constructed denture was but a constant source of annoyance. Often have I heard such patients say that they would willingly give thousands of dollars if they just had their natural teeth back.

Use this and many other as good illustrations to convince him that teeth are priceless gems, once lost can never be reclaimed or duplicated.

After you have impressed him with these facts, remember that a dentist has various materials and various ways he accomplishes results, and all at various prices. You must then talk " goods not prices." By well selected, clinching arguments you must fire his imagination to the desire of having the best regardless of price, or where the cheap class of work fails to satisfy him.

Do not be afraid to ask a just fee for your work simply because your neighbor does the same work for less. If you have sufficiently impressed him with the value of sound teeth you will be surprised how eager he is to have good work done and pay such price as his financial resources will permit. Of course there are exceptions to all rules, but do not let this dishearten you.

On the subject of fees good salesmanship is a wonderful factor. The better you portray the difference between the different kinds and classes of work, their service and permanency, and the skill involved in the construction of each, the easier is the question of fees.

We are all human. The better you are paid for any particular piece of work the more interest you will manifest, and the more painstaking you will be. From the patient's viewpoint, it is human to judge the value of anything by the price you pay.

In the practice of all this your work must prove satisfactory and come up to what you claim it will. I do not believe a signal success can be achieved, no matter what personal attributes the dentist may possess, unless he is a skilful, conscientious workman.

In conclusion, remember, you may go where you wish and you will always find that the highest priced dentist is the busiest, and in the eyes of the public the best; and usually their conclusions are correct.

Yours respectfully,

L. C. BURGARD.

EIGHT HOURS OR EIGHTEEN

The points in this letter are well taken. They outline a condition which would not obtain but for our poor business management. When a dentist must work evenings to earn enough to live in comfort, something is wrong with his business management. When he must work seven days a week to make a living, it is further proof that the business end of his practice is poorly conducted.

Not all dentists who live well work such long hours. Their freedom from such slavery does not arise from superior professional skill. It comes from the exercise of business ability, the ability to sell their services at fees which enable them to have leisure and luxury. We need professional ability, but just at present we need far more to learn good salesmanship. Such learning must be individual—each must learn for himself. The best way to begin is to watch people who sell us things, to note the confident manner of the successful ones, how much of ability and standing they take for granted, how they offer their wares in courteous confidence, how they lead us along and finally "land" us. Try the same things, in your own manner, when selling your services. And fees can be advanced until eight hours a day will suffice for comfort, pleasure and a competence.—EDITOR.

AUGUST 1, 1909.

Editor DENTAL DIGEST,
New York City.

DEAR SIR: I have been very much interested in the articles being published in your up-to-date magazine regarding fees for dental services.

Too much cannot be done along these lines to urge the profession to ask for and demand fees that are commensurate with services rendered and more in proportion to present-day incomes obtained by those less skilled in other vocations.

One phase of modern dental practice that to my mind condemns it as a means of making a livelihood and gaining a competency to any but the most robust (and, indeed, they soon fail, too) is the hours the average dentist works and the little, if any, time he gets for recreation.

I venture to say, from observation and reports from salesmen, etc., at the present time in this city fully three-fourths of the dentists work practically every evening "except Sunday" until 8 P.M., and hundreds work hours longer, also fully two-thirds to three-quarters work Sunday forenoons. This is the worst feature of the practice of our profession. It obscures all other features to my mind, and, indeed, it is probably the hardest problem to solve.

We as a profession, in this city, are not on a par with any of the trade unions, who have, on an average, an eight-hour day, with double pay for overtime and Sunday work.

You may say this is a personal matter with every dentist and that he can regulate his hours to suit himself, but I say he cannot and still make the average trade union wages above his expenses. This question

should be given the attention of our dental societies in preference to things less vital.

We are actually looked down upon by trade unionists in this city, and respected accordingly.

It does seem to me that it should not be considered unethical to combine and put up a solid front to the public and demand those things that are our due and that are so necessary to keep our health in good shape and be able to take care of our patients in the best possible way.

Yours very truly,

(Signed) H. J. Graham.

No. 881 West North Avenue, Chicago, Illinois.

HOW CAN A DENTIST EXPECT RESULTS WHEN HE ORDERS LIKE THIS?

The following is a transcription of an order recently received by a dealer. No model was sent or mentioned, merely this on a postal:

"Please select for me two or three sets ——— ——— Block teeth. I want the teeth for a young lady, and she has a *very* short lip and prominent gums. Hard case to make look well.

"_____."

What sort of a way is this to conduct either a business or a profession? The methods are worse than slipshod. With every convenience human ingenuity has produced to aid him in intelligent and artistic tooth selection, this dentist orders a set of teeth for "a young woman with a short lip and prominent gums." Her face may be long or short, wide or narrow, plump or angular—but nothing is said. The orifice of the mouth may be large or small in proportion to the face. The mouth itself may be large, medium or small. The jaws may properly bite close together or may not; but no model or bite is sent. How can the tooth clerk tell unless he is a mind reader, and something else also?

As I labor in the cause of intelligent tooth selection, I hear on every hand complaints about poor selection by the depot employees. Much of it is true. They do make poor selections; they also make many excellent selections. Why shouldn't they occasionally make a poor selection? It isn't their work, by right, to select teeth. The dentist should make his own selection and send in exact specifications.

Such orders as the one quoted above do harm to all concerned. The depot can't select to suit the dentist; and he holds hard feelings and contempt for the depot.

The chances are that a plate made from such selection will be a reproach to dentistry. It is likely to disgrace the man who made it and to bring reproach on the labors of the profession.

George Wood Clapp.

BROTHER BILL'S LETTERS

Brother Bill is a successful dentist who believes in passing along what he has learned.

*(Bill writes to a friend whom he has been trying to help * a very pertinent letter on recognizing and improving opportunities.)*

MY DEAR HARRY: Ever since you first wrote to me asking suggestions about increasing the returns from your practice, I've been wondering whether I dare write you a very personal letter on the subject of educating patients. You furnished the material the last time I visited you, but I have feared to write, lest you take it as a personal criticism. I have decided, however, that you have sense enough not to do that, and that it may offer more definite suggestions than any other means makes possible.

One morning, as I loafed about your office, a well-dressed, attractive lady came in and said that she wanted a tooth replaced on her upper partial plate. You sat her down in the chair and examined the articulation where the tooth had come loose, and then called me over to see. I looked at the tooth, of course, but I was so much struck with your own blindness as to your opportunities in that mouth that I had difficulty in restraining comment or in seeing the particular repair asked for. You took a little wax impression and bite of the area where the tooth had come away, and dismissed the patient. When she was gone I asked who she was. You replied, " That's Mrs. M——, wife of our leading grocer who has the fine store on the corner."

I didn't say anything for a while—I couldn't. I was so strongly moved to say unpleasant things about your business ability that I couldn't talk at all. I felt that you deserved to be poor and hardup and have your nose forever on the grindstone. And I knew that as long as you remained as blind to your opportunities as you were that morning nobody could help you.

Let me tell you what a rapid glance at that mouth revealed as Mrs. M's needs and your opportunities. She lost all her lower bicuspids and molars some years ago and some dentist had replaced them with a vulcanite lower partial plate that probably fit when made, but did not when I saw it. It moved about with every movement of the mouth and was held to place only when the upper teeth closed against it. As a result of lack of fit and adaptation, it was then pushing the

* See THE DENTAL DIGEST for April and June.

tissues away from the distal sides of the cuspids, and the distal cementum and the places where the clasps rested on the labial surfaces were abraded and sensitive.

The natural lower anteriors were in place, but the gums were receding, and one or two were beginning to loosen. There were enough deposits on and between these teeth to account for the irritation at the gum margins and the gum withdrawal. Mrs. M—— looked very healthy, with no visible excess tissue, and I don't believe her gum trouble was due to any systemic cause.

Of the upper anteriors, all were in place except the right lateral. The right central had a big gold contour filling which had evidently been in place a long time. A dark line to mesial of the filling, with a widening area of discoloration incisally, showed where decay was recurring, because the end of the tooth was worn away and had allowed leakage at the incisal edge. The upper right cuspid had a large amalgam filling on the distal surface, running around somewhat onto the buccal. The second molar was in place and looked sound save for an occlusal amalgam filling, apparently in good condition. The upper left cuspid had a full gold crown and the upper left third molar stood about where the second formerly stood. It had a very large amalgam filling, but seemed sound as a rock. All the upper teeth showed gum irritation and some deposits. The upper left lateral and the upper bicuspids and molars were on a vulcanite plate held to place with clasps that were wearing the enamel of the teeth they enclosed.

Evidently that mouth never presented itself to your vision as a whole. You saw it piecemeal, as its owner brought it to you for a repair of some particular spot that had given out. You probably never thought of putting that entire mouth into first-class condition. But I want to call your attention to the possibilities it offered. And these possibilities were not one-sided—provided you had good sense. They were of the greatest value to Mrs. M—— in prolonged health and increased pleasure. They were valuable to you as a chance to sell your services on a proper plane.

First, you should have put the soft tissues about all the remaining teeth in good shape. That means removing the deposits, polishing the teeth and massaging the gums. You knew about prophylaxis, because we'd been talking it over that very morning, but you evidently regarded it as a matter for discussion and not for practice, because when you had a chance like this you never mentioned it to the patient.

Next, you should have addressed yourself to the remedy of the havoc the partial plates were playing with that mouth. You saw their effects on the remaining tissues, both in forcing the soft tissues back

and in abrading the remaining teeth. And that wear, as you might have seen, must require repair at no far distant date.

Furthermore, you might have seen at a glance by merely having the jaws closed, that neither she nor any other patient could properly masticate food on those plates. I'll bet that 90 per cent. of her hard foods were swallowed half chewed. Moreover, her jaws were coming closer together as the plates settled and her upper front teeth were already beginning to separate a little from the up-thrust of the lower anteriors, because the jaws were not properly separated in the back.

There are two or three systems by which a lower partial plate like this can be put in so firmly that the patient will hardly know them from her own. It requires crowning the lower cuspids in this case, and that is open to some esthetic objections, but the resulting advantages in this case certainly justify such a course. Mrs. M—— is a lady in comfortable financial circumstances. She dresses well, she goes in good society, she has a good home. She can be shown the advantages of having this work done, and that in the best manner. This lower plate should by all means be on a gold base.

Coming to the upper jaw, you have chances for some work that will greatly benefit your patient. Suppose that you have already put the teeth and soft tissues in proper condition as to cleanliness. You will soon have to replace that big gold filling in the central, and it will then be so large as to disfigure her appearance. By taking it out and putting a Richmond crown on that tooth you can support from it the lateral which now is on the plate. That plate has no business whatever in that patient's mouth. Devitalize the upper right cuspid which now has the big amalgam filling, set a Richmond crown on it, crown the second molar and carry a bridge from the cuspid to the molar. At the same time bridge the missing lateral to the cuspid on the distal. Do the same on the left side, using that sound third molar as your posterior abutment. You will then have a mouth in good condition *as a whole.*

I once heard about a man who "couldn't see the forest for the trees." I guess that meant that he couldn't take any broad view of the situation because his mind was so taken up with the details. You suffer from that trouble, and since someone cured me of it, I find dentists everywhere who are still afflicted. They are so concerned with the details of an operation that it occupies their entire mind. That's the proper way to feel when you get to details, but it isn't proper at first.

I saw a railroad built once and I noticed that the engineers first looked over the ground *as a whole.* When they'd done that one gang of workers followed another, working down from the broad view of the engineers, to the narrow detailed view of the gang that drove spikes.

That's the way we should, as dentists, first go over the mouth as a whole, realizing the importance of its functions to the general health and vigor. Following the plans as a whole will naturally come plans in detail. And it will be time enough to concern ourselves with details when we come to their proper place. I guess patients aren't the only ones who need educational work. It looks to me as if we dentists need it quite as much as anyone else. We need to wake up.

I got a hint as to this broad viewpoint from a patient with a broader view than I had. He was a lawyer patient of mine for whom I had done some filling, etc. One day he came in, walked directly to the chair, sat down, and said: "I want you to give my mouth a careful general survey. It isn't doing it's duty. I can't chew my food properly."

Well, sir, between the time he said that and the time when I looked at his mouth, I got a liberal education. I'd never really seen his mouth before, that is *as a mouth* with a series of intricate and important functions. I'd seen a tooth here and there and a cavity here and there, but I'd never seen the mouth. I hadn't seen "the forest for the trees."

You know an idea hits me hard when it does take hold, and I turned to the cabinet and fumbled something for a minute, while I let this idea of really looking at a mouth soak in. Why hadn't I thought of that before. What had I been doing all the years? Just tinkering—like a fellow who recently mended a tire for me and never saw that the wheel was out of true.

When I turned to the chair I was a better dentist than I'd ever been before. In fact I was a real dentist for the first time—a true stomatologist—who had the eyes and the ability to see that mouth as a whole and to study the repair of it as related to the health of the body.

It's immaterial what I did for that lawyer save that I repaired his mouth—not a tooth or teeth—but his mouth. And when I got through it functioned properly. What he did for me was immensely greater than what I did for him. He showed me by one swift, revealing flash what dentistry should be and how it differs from tinkering.

Get this viewpoint, Harry. View a mouth as a whole, as the food gateway of the body, as a laboratory where all food should be comminuted for digestion and the digestion of the starches should begin. Of course it's your duty to allay pain and make small repairs, but these are the details of the greater task.

Those two rows of teeth in proper condition and properly used mean health and vigor to the owner. They mean good digestion, proper assimilation, proper bowel elimination, and freedom from many of the ills that now beset us. More than physicians, more than neurologists, more than anybody else or all put together, the dentist holds the key to

continued health by enabling the mouth to function properly, by teaching people to clean the mouth and keep it clean.

Come away from the trees and get a view of the forest. When you do, and join this perception of the needs of the mouth as a whole to good selling ability and your present skill, you won't have any trouble about getting money.

You'll learn to educate patients to your viewpoint and you'll teach them to pay good fees for the repairs you make. You'll rise to new levels, both professionally and financially, and can then do as some of my professional friends do now, lock your office for a couple of months each summer and enjoy those delights which are provided for those who have eyes to see and ears to hear.

Try it.

Bill

THE EDITOR WANTS SOME HELP

I AM working on an article entitled "What is a Competence and How Shall a Dentist Amass It?" I want it to be as definite and helpful as possible, and I want to ask every dentist who is interested in providing for his own old age to help me with personal information.

You know the articles in the Business Building section of THE DENTAL DIGEST are not written from guesswork or generalities. They are based on facts. That's why they're helpful. And for this article to be what I plan to have it, I must have information from hundreds of dentists. No names or special cases will be given in the article, and every reply will be considered strictly confidential.

Will you please write me the answers to four questions so far as they relate to your own experience?

1. How old were you when you opened your dental office?
2. What does it cost you to conduct your practice per year? (Don't guess in this: take the trouble to figure it out.)
3. How old are you now?
4. How much have you amassed that is actually available to support your old age.

I know those are very personal questions, but I can't do without that information, and the article is wholly for the benefit of the thousands of practitioners who are reading THE DENTAL DIGEST monthly.

EDITOR DENTAL DIGEST,
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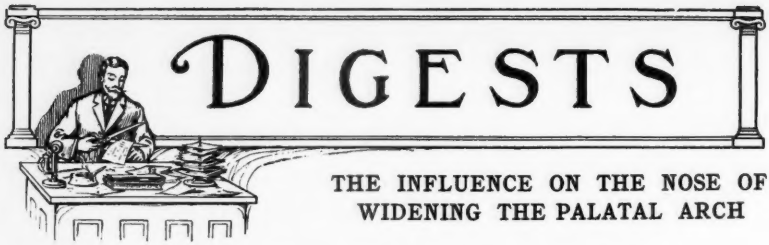

THE INFLUENCE ON THE NOSE OF WIDENING THE PALATAL ARCH

LEE WALLACE DEAN, M.D., IOWA CITY, IOWA

The relation between nasal obstruction and malformation of the jaws and teeth has long been considered by both the dental and medical profession.

Only recently has the proper attention been given to the removal of nasal and postnasal obstruction before correcting deformities of the jaws and teeth. To-day there is much written on this subject, and general practitioners of medicine are referring their little patients to specialists practising rhinology and orthodontia.

The patients are sent first to the rhinologist and then to the dentist. This I believe to be the proper procedure if there is an obstructive lesion in the nose, or the naso-pharynx. There is, however, a very common class of cases in which there is an intimate relation between the nose and the palatal arch, the proper treatment for which is not always given due consideration.

I refer to those cases in which there is constriction of the nares, with a narrow palatal arch, without a pathologic obstructive lesion in the nose. With many of the cases in the class first mentioned, where nasal or postnasal obstruction exists there is also a lack of development of the nasal bones that has much to do with imperfect nasal breathing. What I have to say about the second class of cases, that is, those without obstructive lesions in the nose or nasopharynx, with normal turbinates, applies also to the class of cases just mentioned.

In order that there may be no misunderstanding regarding the kind of cases I place in my second group, let me describe a condition illustrating it, which is not infrequently seen in practice. The patient comes with a complaint of never having breathed well through the nose. Examination of the nose shows turbinates normal in size and structure, septum slightly deflected, as is usually the case in all noses, or markedly deviated, no exostoses, but the inferior turbinates pressing against the septum, or against the floor of the nose, or usually both, which is, of course, an abnormal condition. Adenoids may be present, but their removal does not give the usual relief. The palatal arch is constricted, and, of course, there are malpositions of the teeth.

I have patients fifty years of age with the conditions above described, who have never had proper nasal respiration, and in whose cases no operative procedure on the nose is indicated. In many cases like these, turbinates have been entirely removed in the effort to secure breathing space. This procedure, because of its serious sequelæ, is never indicated except for diseased turbinates. The respiratory function of the nose may be lost by such a procedure. Even if performed, it does not give good results so far as the breathing is concerned, because the anterior nares are so slit that in respiratory effort the alæ of the nose are brought against the septum, and nasal occlusion, in part at least, produced.

If the nose is constricted because of a narrowing of its walls, what is the rational therapy? The only answer possible is this: The nasal walls should be separated and the cavities thus widened.

This can be accomplished in only one way, and that is by widening the palatal arch. That the nose is widened by this procedure we all know. We have all had patients who have told us that widening the arch has improved nasal respiration.

Notwithstanding this well-known fact, I doubt if a great number of patients are referred to the dentist for preliminary widening of the arch before attempting to improve nasal respiration by septum operations or other intranasal operations. These measures are rather resorted to first, and the patient sent to the dentist later.

This is not the correct procedure. If the case is not a typical case of the second class—that is, if there is a pathologic growth obstructing the nose or nasopharynx—this should be removed first, because we should hasten to improve breathing by all proper means, and then widen the arch.

If the nasal operation should take much time, the operation on the palatal arch should be done at the same time. There is no excuse for intranasal work being done in a typical case on a patient with normal turbinates and septum before the orthodontist has accomplished what he can by widening the palatal arch.

It is well known that a dentist should send his patients with nasal obstructions to the rhinologist. It is equally important that the rhinologist send every patient with contracted arch to a dentist.

For many years it has been my practice to send all my younger patients suffering from interference with nasal respiration to the dentist. I believe that this should always be done. Even if the palatal arch is not constricted, there may be other conditions which, if relieved in time, will save the patient great annoyance in years to come.

I have found it exceedingly difficult to measure in the living sub-

ject the increase in size of the nares secured by widening the palatal arch. There is no question but that it occurs. With the widening of the nose and consequent increase of nasal respiration the turgescence of the mucosa so common in constricted noses is improved and the breathing still more benefited.

Wishing to ascertain the actual change that may be made in the osseous walls of the nose itself by a widening of the palatal arch, I asked Dr. G. V. I. Brown, of Milwaukee, to widen the arch of a green skull. I made measurements before and after widening, using a very simple instrument, which I believe will serve for intranasal measurements in the living subject.

The following are the intranasal measurements before and after the widening of the palatal arch:

1. Distance across the posterior nares just posterior to the inferior turbinates: before widening, 32 mm.; after widening, 34 mm.

2. Distance across the posterior nares just above the posterior ends of the middle turbinates: before widening, 23 mm.; after widening, 24.5 mm.

3. Distance from the vomer to the outer wall of the nose in the posterior nares half way from posterior end of the inferior turbinate to the floor of the nose on the left side: before widening, 17 mm.; after widening, 18.5 mm.

4. Same measurement on the right side: before widening, 24 mm.; after widening, 24 mm.

5. Distance between the anterior attachment of inferior turbinate in inferior portion of the middle meatus of the same point on the opposite side: before widening, 23 mm.; after widening, 25 mm.

6. Distance between vomer and inferior turbinate at narrowest part of the inferior meatus, left: before widening, 6 mm.; after widening, 7 mm.

7. Same measurement on the right side: before widening, 8 mm.; after widening, 9 mm.

These measurements speak for themselves. Not only is there a widening of the inferior meatus, but of the middle. Consequently the beneficial results are not confined to the respiratory function of the nose, but there is an improvement in the drainage from the sinuses. Pressure in the upper portion of the nose, with its numerous reflex troubles, may be relieved.

The beneficial influence of improvement of nasal respiration in the general condition of patients is well known. I have had patients that have exhibited as much and similar improvement after widening the palatal arch as others have shown after the removal of adenoids.—*Jour. Am. Med. Assoc.*

MEDICAL ASPECT OF DENTISTRY AND THE NECESSITY OF DENTAL INSTRUCTION FOR MEDICAL STUDENTS

H. P. Pickerill, in the *British Medical Journal,* discusses the various lesions due to reflex irritation of the teeth—epilepsy, neuralgia, spurious tetanus, cardiac irregularity, the association of dental with pelvic troubles and ear and eye disorders, local cellulitis, and various growths, etc. He discusses the bacteriology of the teeth, and says that in the past, both in dentistry and medicine, there has been too great a tendency to regard the teeth as isolated parts of an organism, existing of themselves and for themselves. Efficient mastication is the best stimulus for gastric and salivary secretion, and it depends on the absence of dental caries. It must be recognized that the teeth are an integral and inseparable part of the alimentary system, physiologically and pathologically. Abdominal surgeons are complaining of a something at work lowering the resistance of the alimentary tract, and this "something," Pickerill holds, is to be found in the enormous strain thrown on it by the constant ingestion of improperly masticated food, incorporated with more or less virulent organisms, toxins and pus from diseased teeth, and also because of the avoidance of hard food, in part secondary to the tenderness of the diseased teeth. The intestines become atonic, having to deal only with non-fibrous, easily digestible substances, and thus become an easy prey to micro-organisms. Dental caries is largely due to errors of diet commencing before birth and extending over the first twelve years of a child's life. Pickerill would have the medical student have a knowledge of what diet is beneficial and what deleterious to the teeth; for what is best for the teeth is best for the rest of the alimentary system. The physician should be able to write prescriptions for mouth washes, dentifrices, etc., suited to various conditions of the mouth, and to instruct parents in the care of children's teeth. He should know the value of a tooth—when it can be safely lost and when it must be saved; the mere extraction of one tooth will often ruin a patient's articulation. He should be able to recognize the difference between dental myelitis; periodontitis and alveolar abscess, and to relieve the pain of each of them without extracting, should this be necessary. In fact, every medical student should have some dental training, and Pickerill would like to see the converse true, namely, that every dentist should possess a medical qualification. A physician should also recognize the effect of measles, scarlet fever, rickets and syphilis on the teeth, and should know something of the treatment of fractures of the jaws by interdental methods.—*Jour. Am. Med. Assoc.*

THE UNITY OF THE MEDICAL SCIENCES

Dr. Algernon T. Bristow, in an interesting address delivered before the Brooklyn Institute of Arts and Sciences, says that the animal body is the most complicated and wonderful piece of machinery in the world. It is the only engine which generates its own power, disposes of its waste products and automatically renews its parts. The digestive system forms the furnace in which the fuel is received for the generation of power, while the skin, kidneys and lungs make up a complicated apparatus for getting rid of the waste products of combustion. As the art of medicine concerns itself with the care of this complicated mass of machinery and its repair when out of order, it is not strange to find that almost every science known to man is represented somewhere in our art. Take anatomy, for instance. When we come to consider the bony system alone, questions of strain and material at once come up which can be solved only by sciences like those of mechanical engineering and architecture. The first boat-builder who went a step beyond the primitive dugout must surely have gained his idea of a keel and ribs from the human skeleton, so close is the analogy between the methods of construction.

There is between sciences, however, whether physical or abstract, one common bond of union, namely, the fact that they all have for a foundation the mother of all sciences, the science of sciences, logic. Without correct methods of reasoning no science can exist. The very definition of the word "science" is "knowledge gained and verified by observation and correct reasoning." The errors of the mind may be classed under two heads, either as errors of observation or of erroneous deductions from faulty methods of reasoning. Thus, if our methods are illogical, our science ceases to be such. All the errors of the past are due to one or other of these causes, and for centuries man has been blundering onward from truth to error and painfully back again to truth.

Tennyson describes us well as "children crying in the night with no language but a cry." The knowledge of yesterday is the foolishness of to-day, and the wisdom of to-day will be but as folly to the future. We stumble along in our pathway toward the light, gaining a little real knowledge in each century, a little enduring truth.—*Jour. Am. Med. Assoc.*

SOCIETY AND OTHER NOTES

INDIANA.

The Northern Indiana Dental Society will hold its annual meeting at Goshen, September 7 and 8, 1909.—W. O. VALLETTE, *Secretary.*

MASSACHUSETTS.

The Fifteenth Annual Meeting of the Northeastern Dental Association will be held in the Churchill House, Angell St., Providence, R. I., on the 7th, 8th and 9th of October, 1909. The Officers and Committees intend this to be a very interesting and instructive meeting.—E. O. KINSMAN, *Secretary.*

NORTHERN ILLINOIS.

The Twenty-second Annual Meeting of the Northern Illinois Dental Society will convene at Elgin, October 20-21, 1909. An interesting and instructive program is anticipated. A banquet will be served to all members in full membership.—FREDERICK H. BOWERS, *Secretary.*

OHIO.

The Ohio State Dental Board will hold its regular fall meeting in Columbus on October 19-22, 1909, for the examination of applicants for license.—F. R. CHAPMAN, *Secretary,* 305 Schultz Building, Columbus, O.

SOUTHWESTERN NEBRASKA.

The Sixth Semi-annual Meeting of the Southwestern Nebraska Dental Society will be held in Holdrege the 28th of September. The executive committee have arranged an exceptionally fine program.—W. A. MCHENRY, *Secretary,* Nelson, Neb.

WEST VIRGINIA.

The West Virginia State Dental Society will hold its annual meeting at Wheeling, October 13, 14 and 15, 1909.

Drake University College of Dentistry was placed on the accredited list of schools of the National Association of Dental Examiners at their Annual Meeting at Fortress Monroe, August 2-4, 1909.

The Odontological Society of Western Pennsylvania, at a regular meeting held at the Monongahela House, Pittsburgh, Pa., June 8, 1909, passed, unanimously, the following resolution:

1st. That this Society establish a library of dental and medical journals and suitable books.

2d. That a post-graduate reading course be instituted in connection with a circulating library, and that a quarterly bulletin be published by which the members will receive an outline of the course of study.

3d. That the President appoint a committee of three members (the Librarian to be Chairman thereof) to devise ways and means for the same.

4th. That the Secretary be instructed to subscribe to the Dental Index Bureau; and that the index cards be delivered to and cared for by the said committee.

This is a move in the right direction. The Illinois State Dental Society is conducting a post-graduate course and the members of the Society are most enthusiastic about it. Why not get busy and start one in your local society? You will not regret it. It will arouse your members to renewed activity, increase your membership, and be instructive to everybody.

By means of the index cards it will become an easy matter to lay out a course of study. It will enable you to assign subjects for papers to your members and lay out a course of reading for them which will facilitate their work. You can prepare your programs for a year ahead. Your members will develop to such an extent that you will not have to lay out large sums for outside talent. The saving in this, together with the increased dues from the larger membership, which is sure to follow the move, will more than pay for the cost.

Many societies have already subscribed to the Dental Index Bureau. Some of these Societies expect to institute post-graduate reading courses, while others have subscribed because they consider it a duty to the profession to support the movement.

PATENTS

926583. Dental clamp, H. S. Miller, Rochester, N. Y.
926977. Dental instrument tray, J. Brun, Christiania, Norway.
927420. Automatic dental hammer, R. P. Lyle, Portland, Oregon.
927844. Dental-silk receptacle, H. Emerson, Milton, Mass.
927850. Dental appliance, J. Gartrell, Washington, D. C.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

OPPORTUNITIES FOR WRITERS

THE DENTAL DIGEST offers a wide audience to those writers whose articles appear in its pages. Probably a larger percentage of DIGEST subscribers read the magazine through than with other dental magazines.

The editors will be pleased to look over articles intended for publication.